OFFICIAL PUBLICATION OF THE PROCEEDINGS AMERICAN ASSOCIATION OF TEXTILE CHEMISTS AND COLORISTS

OCTOBER 1, 1951
VOLUME 40, No. 20

# AMERICAN DYESTUFF REPORTER

DEVOTED TO TEXTILE CHEMISTRY • BLEACHING • DYEING • PRINTING • FINISHING

A.A.T.C.C. CONVENTION ISSUE


## Colors *custom-made* for nylon

NEW DU PONT CAPRACYL DYES
are neutral dyeing colors—
designed specifically to produce the *highest possible light fastness on nylon.*

They can be applied in the same short time cycle as acid colors . . . but have decidedly superior light and wet fastness on filament nylon. For example, Capracyl Blue G is especially recommended for dyeing nylon staple. The dyed staple can be converted into those fabrics which require superior light fastness — such as upholstery materials, automotive-top materials, government fabrics and outerwear.

These CAPRACYL dyes are suitable for dyeing wool, giving fastness properties similar to nylon.

*For information on CAPRACYL dyes . . . or for help on any coloring problem . . . consult our Technical Staff. E. I. du Pont de Nemours & Co. (Inc.), Dyestuffs Division, Wilmington 98, Delaware.*

*Du Pont Dyestuffs*

DU PONT

BETTER THINGS FOR BETTER LIVING . . . THROUGH CHEMISTRY

Use new naphthol AS-KB !

AS-KB { light fastness
brighter blue tint
bluish pink shade

Pfister Chemical Works INC.

RIDGEFIELD NEW JERSEY

(write to Pfister for sample today)

SOUTHERN REPRESENTATIVE—DYER S. MOSS CO., CHARLOTTE, N. C.

# Penntop's FOR PULCHRITUDE...

. . . with TV's most telegenic subject, Roxanne, at the Royce Booth in the Penntop to register your entry in the competition for valuable prizes. There's a bonus, too, in the wealth of information available on Royce's new line of desizing enzymes.

Featured in the current series of Royce ads in trade journals, Roxanne will personally greet you in the Royce Booth. Until then, look for her on magazine covers and nationally famous TV shows . . . and for Royce Chemicals wherever quality and economy meet in modern textile processing.

booth 79, HOTEL STATLER'S Penntop
just off the elevator, 18th floor...
...GOING UP!

Royce
ROYCE CHEMICAL CO.
CHEMICAL COMPANY · CARLTON HILL, NEW JERSEY
*Manufacturers of Chemicals for the Textile Industry*

8237

NYANZA

TEXTILE CHEMICALS

NYANZA

ANILINE and ALIZARINE COLORS

for

WOOL · COTTON
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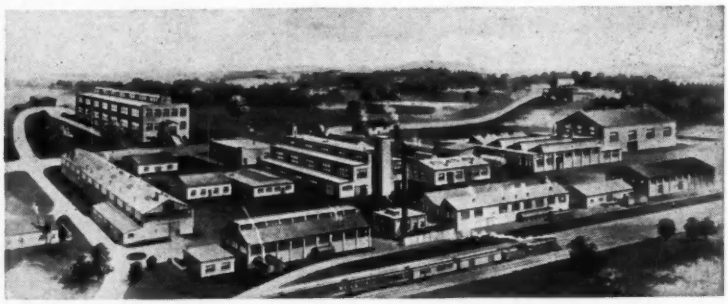
NYLON and MIXED FIBERS



NYANZA COLOR & CHEMICAL COMPANY, Inc.

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CANADIAN AGENTS: Charles Albert Smith Limited, 123 Liberty St., TORONTO, CANADA

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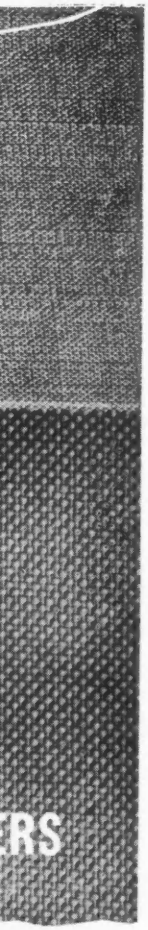

shing Co., Inc.,
s matter, Nov

# NOW more STYMER is AVAILABLE

## to help you cut sizing costs

Production of Stymer, Monsanto's synthetic resin sizing agent for rayon, has just been increased again. If you are looking for ways to speed production and cut costs, *now* is the time to get in touch with Monsanto. Here's why:

**Stymer is uniform, dependable.** A synthetic product, with definite and controlled properties, Stymer permits you to control your slashing and weaving processes more accurately, more economically.

**Stymer is easily mixed and stored.** Large batches of Stymer can be mixed in advance and stored uncovered for long periods, without loss.

**Stymer doesn't gel** when cold. It doesn't clog pipes or valves . . . doesn't "scum" in the size box . . . saves costly, time-consuming cleaning.

**Stymer cuts weaving costs** by reducing or eliminating static problems . . . by reducing shedding and accumulations at the drop wires, heddles or reeds . . . by preventing warp chafing . . . and in many other ways.

**Stymer desizes in a hurry.** Easily rinsed in warm water with a detergent in jig, beck or continuous washer, Stymer leaves the goods well prepared for subsequent operations. One more reason Stymer is in heavy demand in many of the largest and best-known rayon mills!

Stymer: Reg. U. S. Pat. Off.

## Stymer successfully used in leading mills

Stymer has proved its advantages in 115 of the principal rayon mills in the United States after full evaluation of its efficiency and economy.

Why not bring these benefits to your mill?

**FOR FULL INFORMATION ABOUT STYMER . . . FILL IN AND MAIL THE HANDY COUPON**

MONSANTO
CHEMICALS – PLASTICS

SERVING INDUSTRY . . .
WHICH SERVES MANKIND

MONSANTO CHEMICAL COMPANY, Textile Chemicals Dept., Desk ADT 45, Everett Station, Boston 49, Mass.

Please send me information on Stymer.

Name & Title _____

Company _____

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*Joins the famous family*

# PHARMOLS*

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# PHARMAZOIDS*

**Pharmazoids now joins the famous family of Pharmols and Pharmasols . . . Pharmazoids . . . stabilized diazotized bases which can be mixed with any available napthol to make a resultant Pharmasol.**

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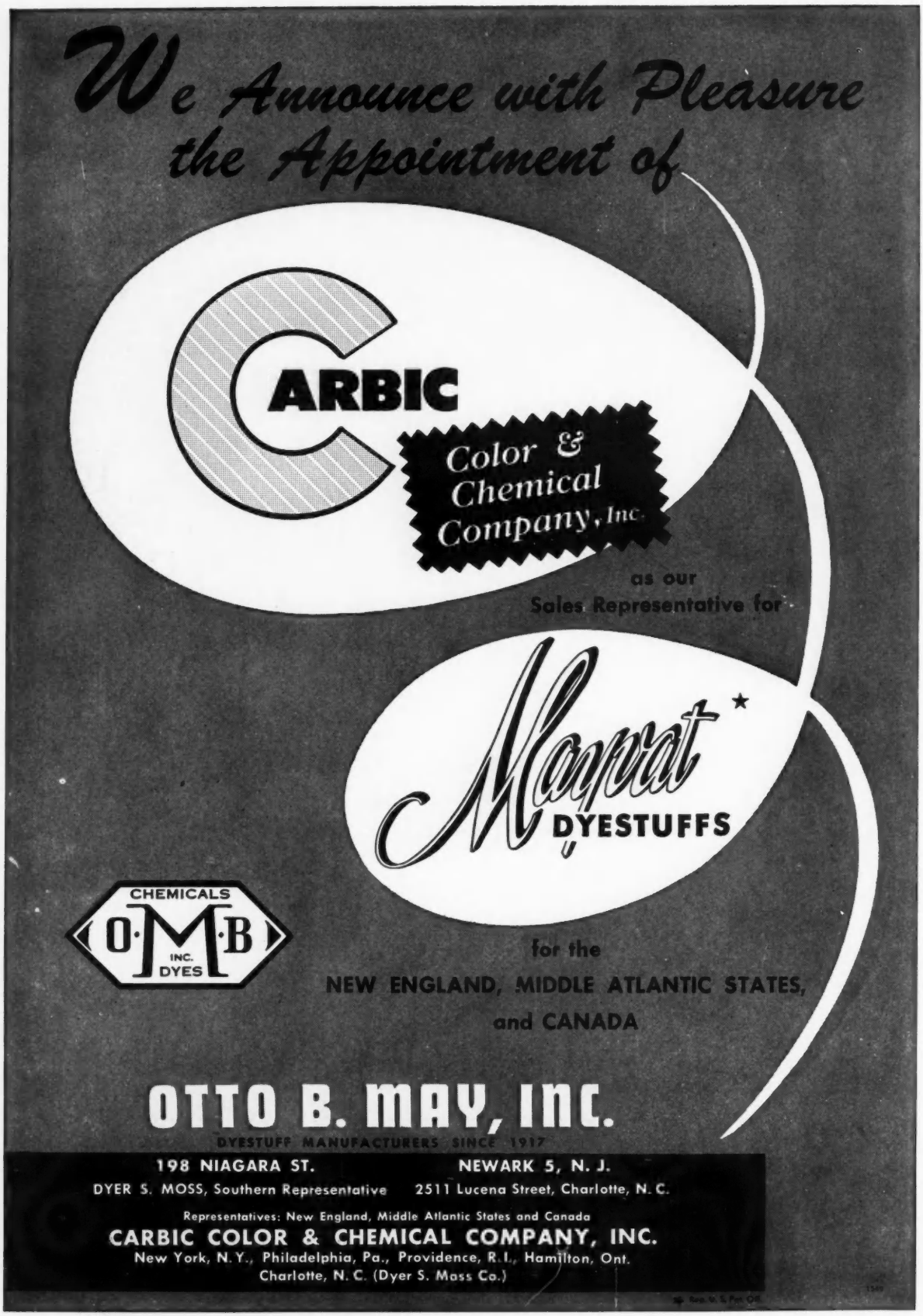
We Announce with Pleasure
the Appointment of
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# An open letter to package dyers

CABLE ADDRESS OBERMAIER, NEW YORK
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**Standard Fabricators**
INCORPORATED

Obermaier TRADE MARK

*Dyeing & Drying Machinery*
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333 Walton Avenue
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Gentlemen:

Re: Package Drying in One Hour

Standard Fabricators, Inc. has just designed the most revolutionary Extractor-Drier in package dyeing history. This new development has reduced package drying time from a normal four to five hours operation to an average of two hours for a complete cycle of extraction and drying.

At the coming AATCC Convention, we intend to demonstrate the superb performance of this Extractor-Drier. We shall take any commercial wound package you bring and dry it within one hour.

We invite you to take part in witnessing one of the greatest achievements in package drying.

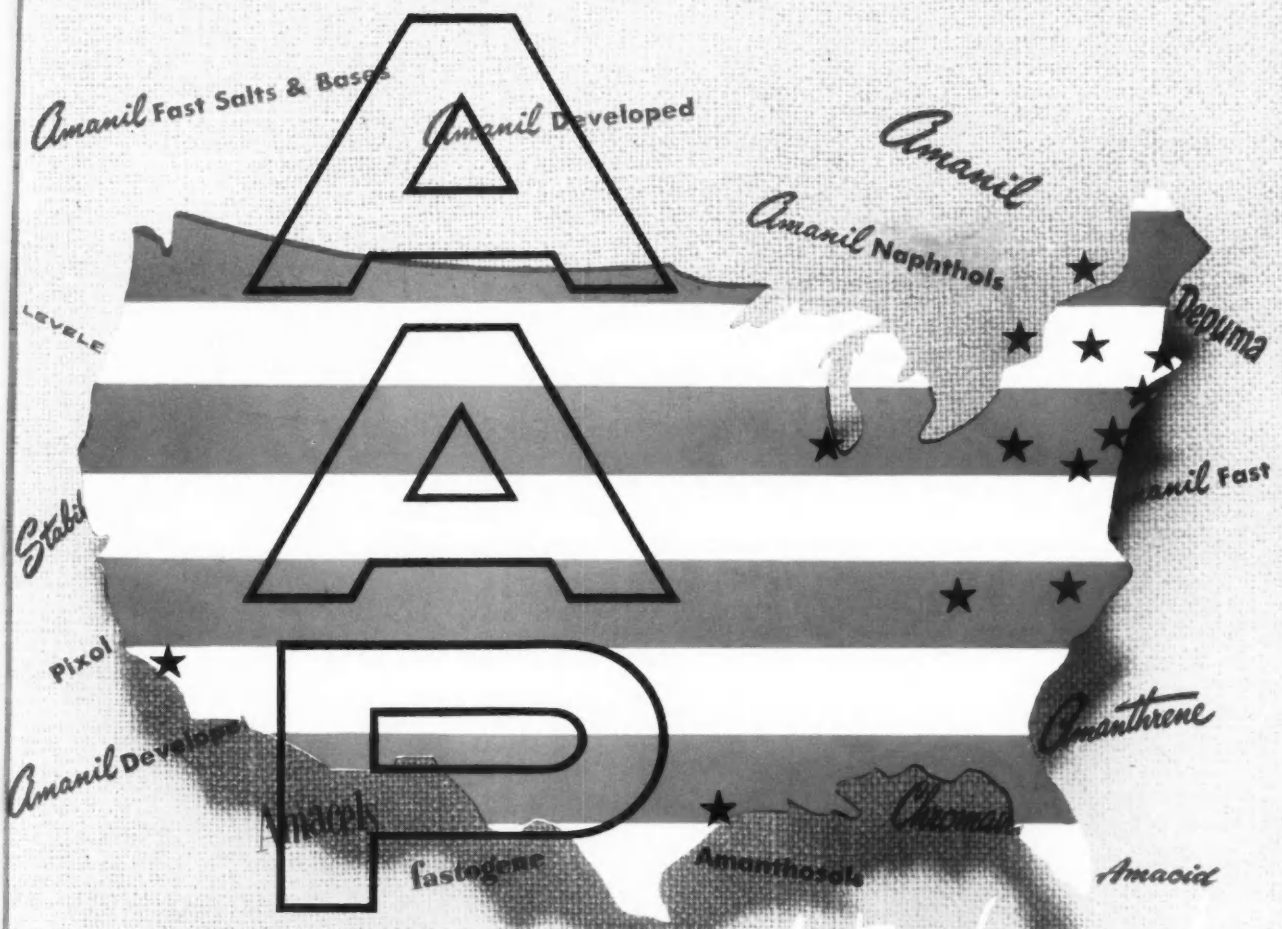
Very truly yours,

STANDARD FABRICATORS, INC.

P. S. Our booth number is 92.

or practically in any desired time

Yes, 1 hour!




**pattern for service at the** *point-of-need*

To serve its customers with maximum efficiency, A.A.P. maintains many strategically placed Branch Sales Offices, in addition to its home office in New York City and its 35-acre manufacturing works at Lock Haven, Pennsylvania.

Like the main office in New York City, each branch has its own warehousing facilities and complete application laboratories; thus, dyers, finishers, and printers in all textile centers are assured of convenient sources of supply, as well as prompt and expert assistance whenever special color problems arise.

Behind A.A.P.'s extensive facilities lie almost four decades of constant research and rigid manufacturing control. The benefits of this accumulated experience are yours for the asking. Technicians from our nearest branch will be happy to provide you, at any time, with full information on A.A.P. products and service.

**AMERICAN ANILINE PRODUCTS, INC.**

**50 Union Square, New York, N. Y.**
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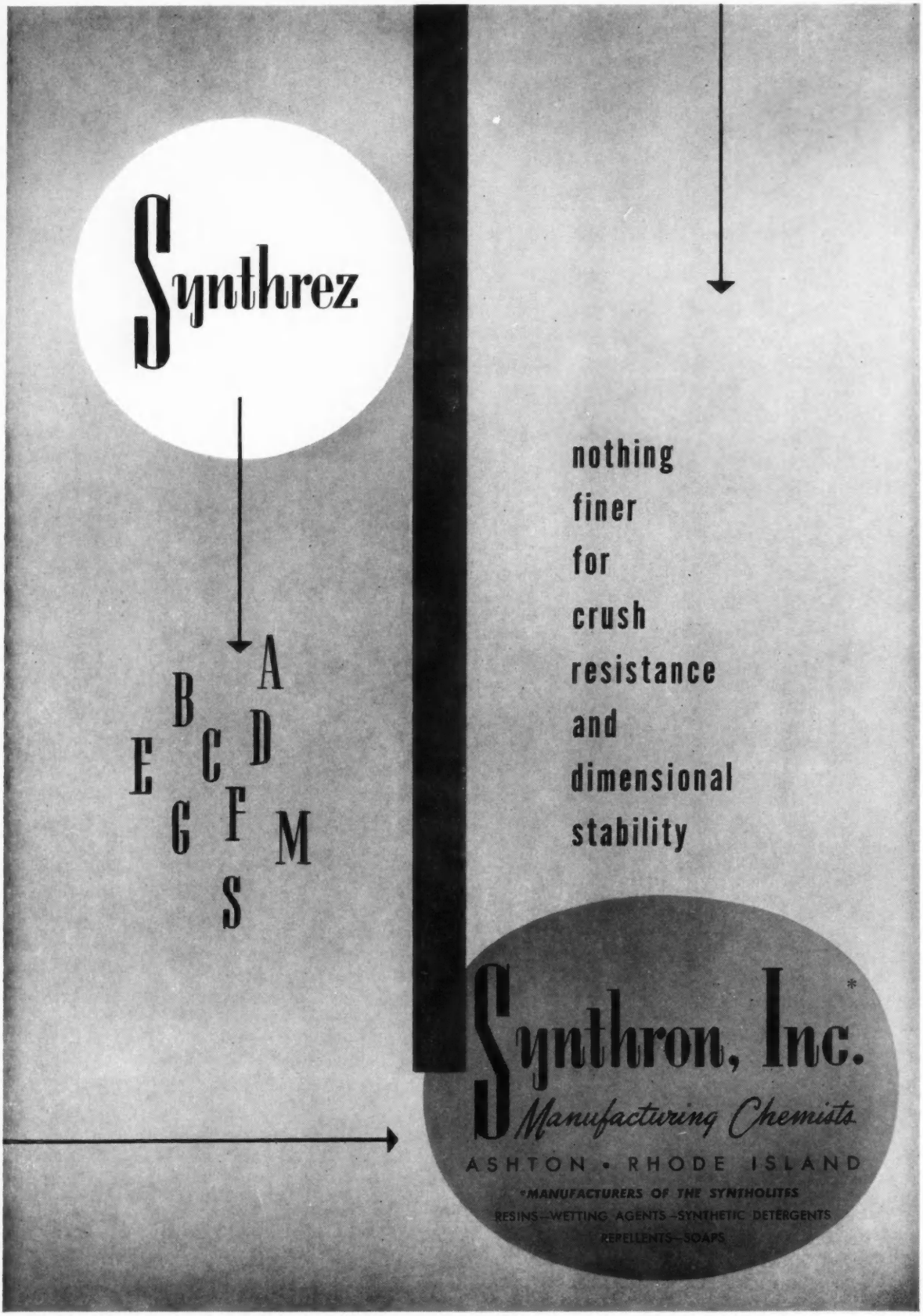
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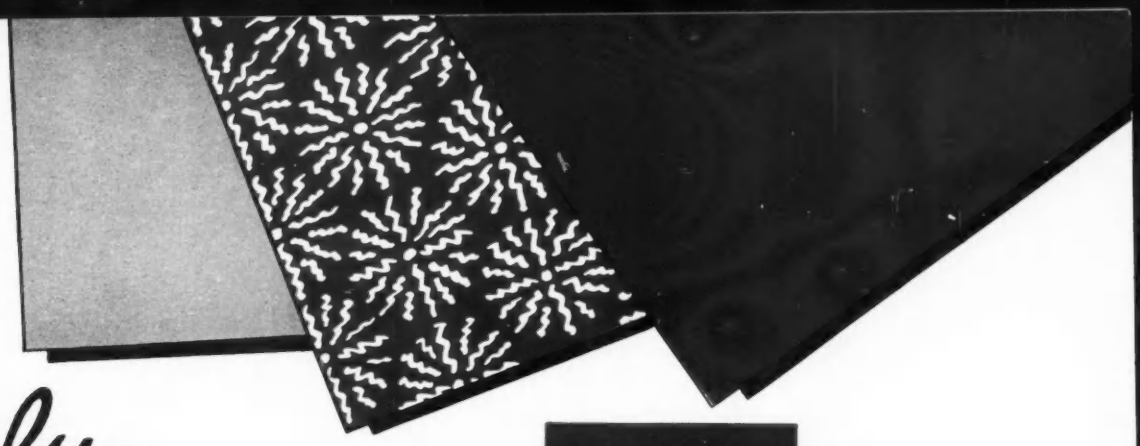

*Only*

# CHLORANTINE FAST **RED 6 BLL** DELIVERS

## ALL OF THESE **7** VERSATILE ADVANTAGES FOR QUALITY DYEING

- ★ ***DISCHARGE***
- ★ ***WASH FASTNESS***
- ★ ***LIGHT FASTNESS***
- ★ ***ACETATE RESERVE***
- ★ ***NYLON RESERVE***
- ★ ***WOOL RESERVE***
- ★ ***LEVEL DYEING***

This unique combination of properties . . . provided in their entirety only with Chlorantine Fast Red 6BLL . . . makes it the red of choice for quality dyeing of cottons, rayons and mixed fabrics.

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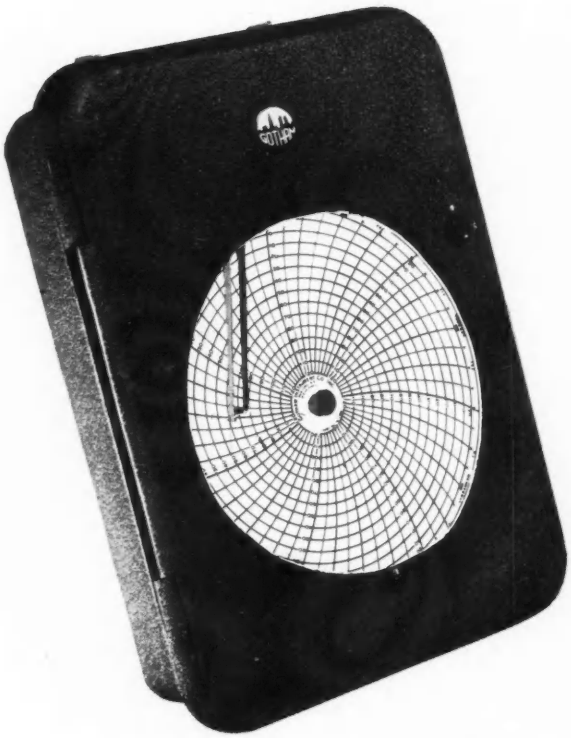
# GOTHAM CONVERTIBLE

## grows or changes to fit your needs



Want an instrument that can grow or change to fit your needs—an instrument that is a miser for maintenance and replacement inventory?—Then choose the Gotham Convertible. It is a 1-2-3-4 pen recorder; 14 pressure, temperature and time operation combinations. It is a recorder controller; there are 38 pressure, temperature and time operation combinations.

All components are Gotham standard, factory calibrated systems, completely interchangeable and easily removable or replaceable at the job site.

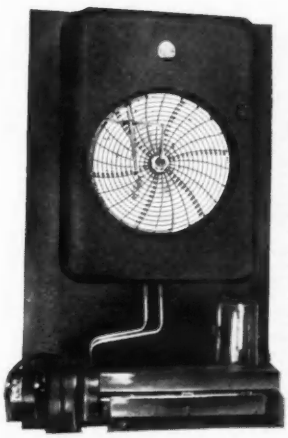
Number of functions possible depends on whether instrument is 6", 9" or 12" chart size.

GOTHAM INSTRUMENTS

*Keep everything under control with Gotham*

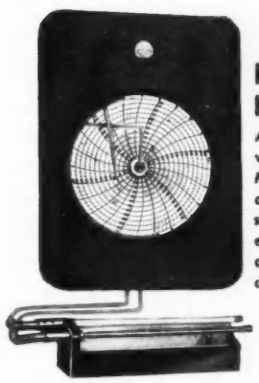
### SELF-CONTAINED PORTABLE RECORDER

Here, at last, is a portable recorder built to full-size instrument reliability. Built from Gotham standard elements, interchangeable with other Gotham instruments. 6", 9" and 12" chart sizes. Mercury, Vapor or Pressure Actuated. Spring or electric chart drive. See Catalog 400.



### RECORDING PSYCHROMETER

Incorporates highly accurate and responsive thermal systems and many other Gotham standard convertible elements. Wet and dry bulb type. Motor-driven suction fan. 12" chart size. Catalog 400.



### RECORDING HYGROMETER

A 2-pen recorder of the wet and dry bulb type. Mercury or Vapor Actuated. 9" and 12" chart sizes. Available with variety of wet and dry bulb assemblies depending on application. Catalog 400.

GOTHAM INSTRUMENTS
Division of American Machine and Metals, Inc.
Dept. 4, 233 Broadway
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Please send me a copy of your

- ☐ Catalog 100—Industrial Thermometers
- ☐ Catalog 200—Dial Type Thermometers
- ☐ Catalog 400—Recorders, Psychrometers, Hygrometers
- ☐ Catalog 500—Controllers
- ☐ Have your representative call. No obligation.

Name.....Title.....

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## To The A. A. T. C. C.

Our congratulations on your many years of uninterrupted service in the advancement of the science of Textile Wet-Processing.

# BLACKS...

- ACID
- DIRECT
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Consult your local dyestuff distributors for information and samples. Shipments can be made from their convenient stocks or from our Baltimore and Paterson warehouses.

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ARMOUR *Chemical Division*

**Fatty Acids**
**Long-Chain Fatty Acid Derivatives**
**Industrial Oils**

## Durable Water Repellents from Fatty Amides

"Armid" is the Armour trade-name given to the general class of long chain fatty amides derived from fatty acids. These high molecular weight amides are high-melting, wax-like materials. The commercially pure amides are water-insoluble and neutral.

One amide in this series, Armid HT, has superior properties for water repellency applications when compared with paraffin and natural waxes.

The excellent water repellent properties of Armid HT derivatives are due primarily to the combination of the amide grouping with a long, saturated straight chain. Durability of the water repellent effect results from the relative insolubility of the derivatives under dry-cleaning operating conditions, and from their high-melting points and poor emulsification characteristics with the soaps and detergents used in laundering.

Armid HT is composed of 25% hexadecane amide, 70% octadecane amide and 5% octadecene amide, is off-white in color and has a melting point of approximately 98° C.

In contrast with the chemical inertness of the hydrocarbons, Armid HT is reactive chemically. Advantage has been taken of its reactivity with formaldehyde in particular to prepare thermally unstable quaternary ammonium salts. These are applied to fabrics from aqueous solution and decomposed under heat to leave an insoluble, durable water repellent

residue within the fabric. Reactivity with formaldehyde also permits compounding of stearamide or its derivatives with thermosetting resins to produce durable water repellent effects. Many of these thermally unstable compounds, however, are covered by patents and those patents should be consulted.

Armid HT is packaged in flake form in 100 lb. multi-wall paper bags. For samples or additional information on the Armids, mail the coupon below.

## Low-Temperature Solvent Crystallized Oleic Acid

Another new product has been added to Armour's line of fatty acids. Already the manufacturer of the most complete line of high-purity distilled fatty acids that can be found anywhere, the Armour Chemical Division now offers low-temperature solvent crystallized oleic acid.

This exclusive process offers users of oleic acid a product that has advantages not found in ordinary distilled or pressed products. The extremely low temperatures employed guarantee a substantially lower saturated acid content than conventional types of oleic acid. In addition, solvent crystallized oleic acids are ester-free materials since the solvent used is not reactive with fatty acids. This new product is characterized by bland odor and has excellent heat stability.

Armour's low-titer White Oleic Acid meets U. S. Pharmacopeia specifications and is recommended for those uses that require a light color as well as a low titer. For applications that require a low titer but not a very light color, low-titer Distilled Red Oil is recommended.

**White Oleic Acid**
**(Low Titer)**

| | Min. | Max. |
|---|---|---|
| Titer | — | 5°C |
| Iodine No. (Wijs) | 90 | 95 |
| Acid Value | 195 | 201 |
| Saponification Value | 195 | 201 |
| Unsaponifiable | — | 2% |
| Color (Lovibond 5¼" tubes) | — | 1.5R-15Y |

**Distilled Red Oil**
**(Low Titer)**

| | Min. | Max. |
|---|---|---|
| Titer | — | 5°C |
| Iodine No. (Wijs) | 90 | 95 |
| Acid Value | 193 | 200 |
| Saponification Value | 193 | 200 |
| Unsaponifiable | — | 3% |
| Color (Lovibond 1¼" tubes) | — | 8.0R-30Y |

Armour's Oleic Acids are available in 55 gallon drums and aluminum tank cars. Write today for samples and prices.

### Lard Oil Lubricants

Lard oil possesses the property of "oiliness" so essential in the lubrication field. In addition, lard oils are readily saponified when treated with alkalies and possess non-drying qualities.

Where a high grade lubricant is required, as in drawing copper and brass tubing, Extra Winter Strained Lard Oil is recommended. Its low free fatty acid content makes it ideally suited as a base for such products.

Extra Winter Strained Lard Oil is only one in a complete range of lard oils offered to the lubrication field by the Armour Chemical Division. Write today for your free copy of a chart showing "Specifications for Armour Industrial Oils."

### Reading for Research Chemists

To help research chemists, the Armour Chemical Division continually prepares informative literature on chemicals derived from fats. The two technical bulletins described below are available free of charge.

For research chemists interested in fatty amines (organic bases or alkalies made from fatty acids), Armour has prepared a detailed 24-page bulletin entitled, "The Chemistry of Fatty Amines."

"The Chemistry of Fatty Acids" is the title of another technical bulletin offered by the Armour Chemical Division. It describes fatty acids, their composition, reactions, and derivatives.

Either or both of these booklets are yours for the asking. Use the coupon below to make your request.

### Mail this Coupon

Please send additional information on

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ARMOUR *Chemical Division*
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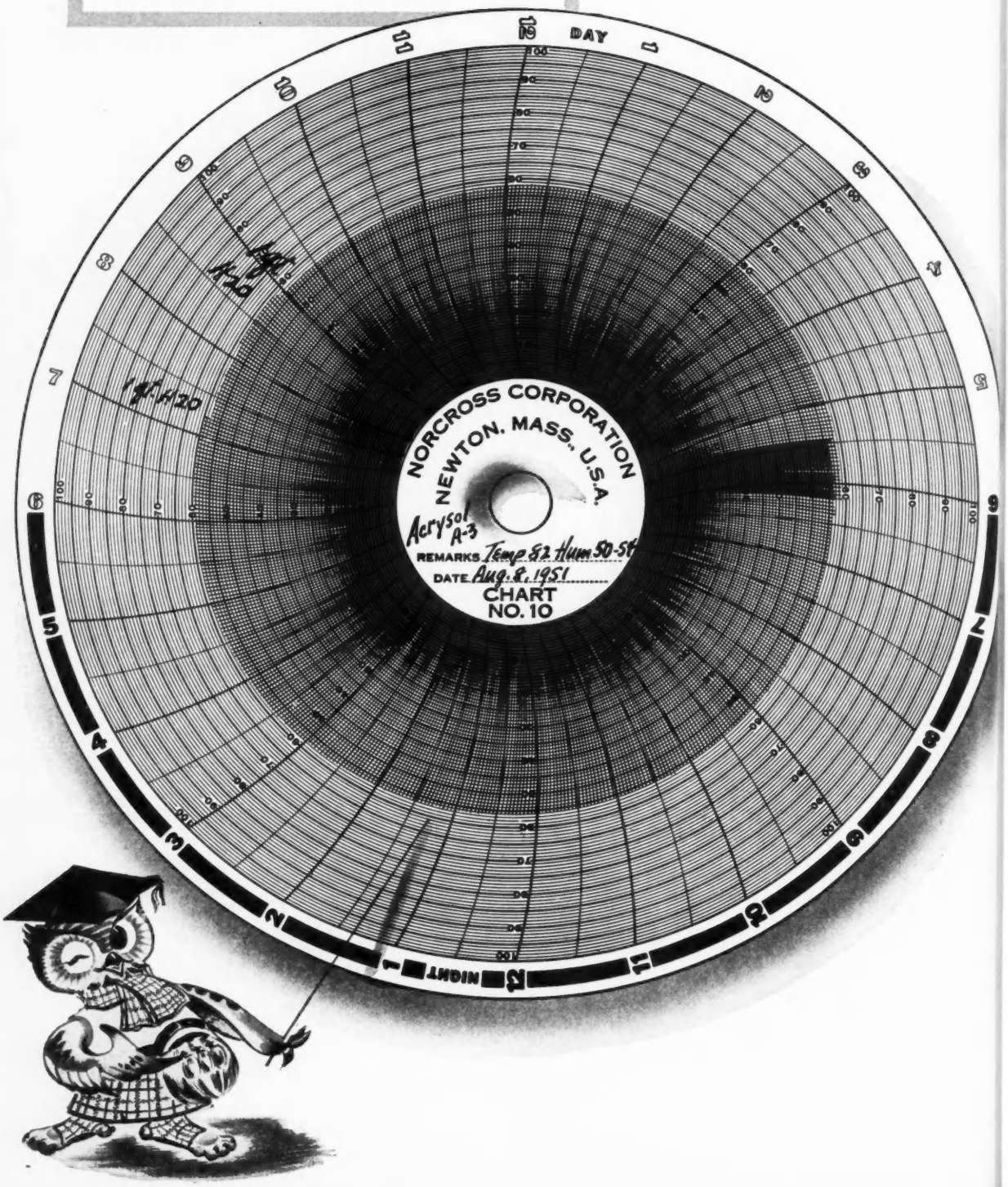
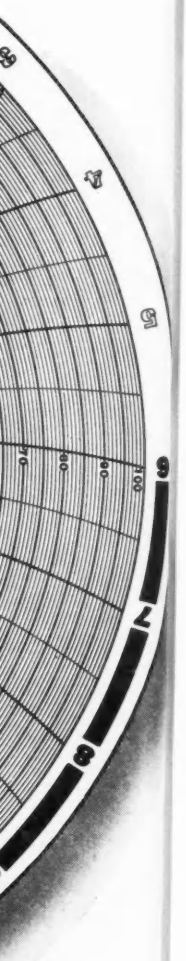
# ACRYSOL A-3 Maintains Constant





# Viscosity in Single End Sizing of Nylon Tricot Yarns

***25% solution of polyacrylic acid***
***uniform viscosity and application***
***high adhesion—will not rub off or shed***
***maximum protection for the yarns***
***easily removed in scouring***

This is a reproduction of a chart from a Norcross automatic recording viscometer, which measures the viscosity of a solution at three minute intervals. This chart, which covers a period of twenty-four hours, demonstrates the remarkable uniformity of ACRYSOL A-3 sizing solutions, a major factor in the production of uniformly sized tricot yarns. At certain points indicated on the chart, water was added to replace that lost by evaporation. Thus, the viscosity measurement offers a convenient control of the size concentration.

Supplied as an aqueous solution containing 25% polyacrylic acid, ACRYSOL A-3 is easily diluted to the proper size concentration and viscosity. ACRYSOL A-3 does not rub off or flake during the coning, warping, and knitting operations, and therefore provides maximum protection.

CHEMICALS FOR INDUSTRY

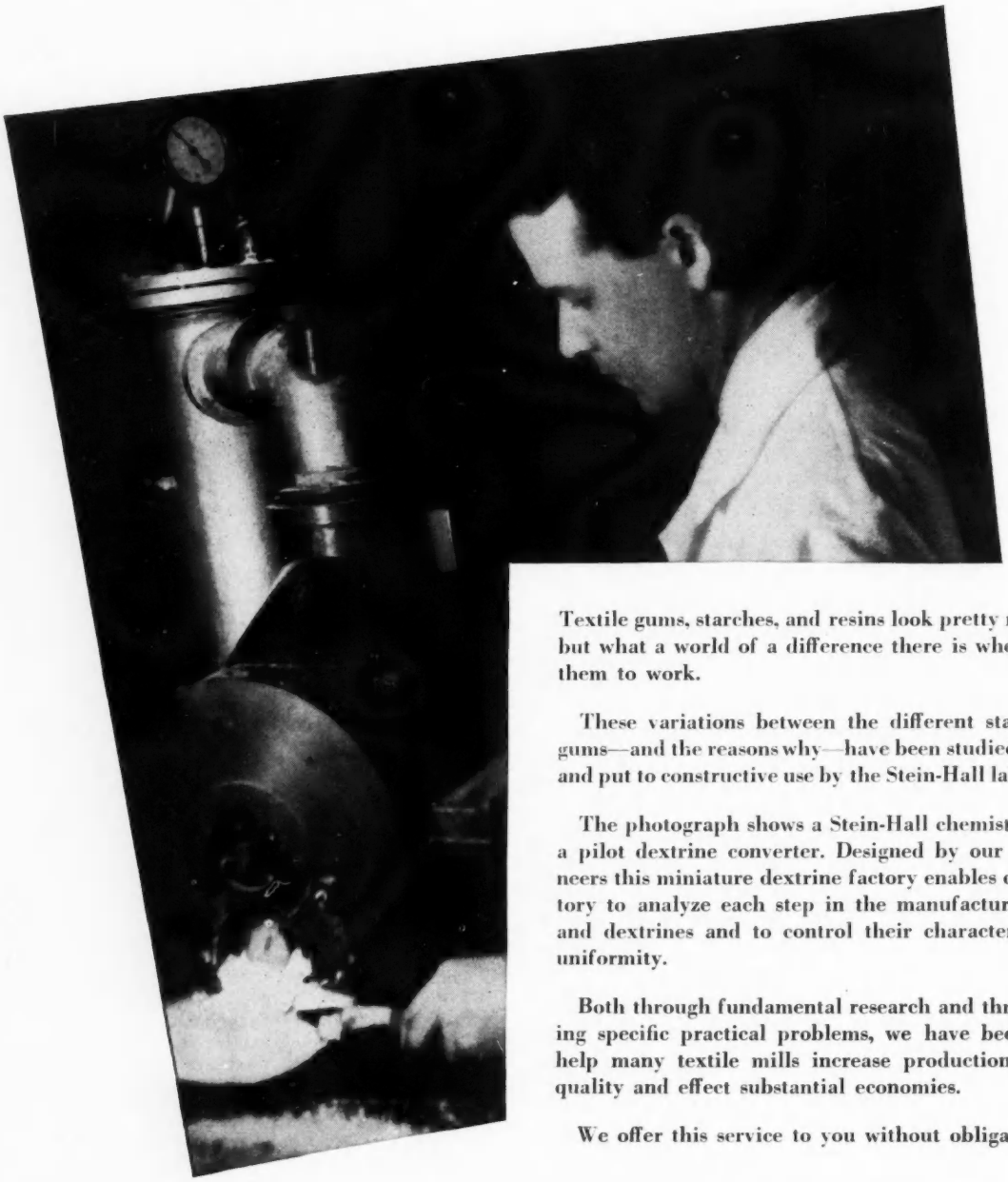
**ROHM & HAAS COMPANY**

WASHINGTON SQUARE, PHILADELPHIA 5, PA.

*Representatives in principal foreign countries*

*ACRYSOL is a trade-mark, Reg. U.S. Pat. Off. and in principal foreign countries.*

# START WITH THE FINISH!



Textile gums, starches, and resins look pretty much alike but what a world of a difference there is when you put them to work.

These variations between the different starches and gums—and the reasons why—have been studied, analyzed and put to constructive use by the Stein-Hall laboratories.

The photograph shows a Stein-Hall chemist operating a pilot dextrine converter. Designed by our own engineers this miniature dextrine factory enables our laboratory to analyze each step in the manufacture of gums and dextrines and to control their characteristics and uniformity.

Both through fundamental research and through solving specific practical problems, we have been able to help many textile mills increase production, improve quality and effect substantial economies.

We offer this service to you without obligation.

HALLMARK® QUALITY PRODUCTS

**STEIN SH HALL**

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Wyandotte Chemicals
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# DEVELOPMENT NEWS

## PLURONICS DEMONSTRATE WORTH IN MANY TEXTILE APPLICATIONS

***New Series of Nonionic Surface Active Agents Offers Advantages Where Wetting and Penetrating Ability Plus A-1 Detergency and Complete Rinsability Are Required***

Though recently introduced, the Pluronics have won quick acceptance in many textile applications. Users have commented on their stability, effectiveness in low concentrations, low-foaming power and complete rinsability.

Developed by Wyandotte, the Pluronics are surface active agents of unusually high molecular weight. New and different, they often exercise synergistic effects with many types of colloidal materials.

Four of the series—Pluronic L44, Pluronic L62, Pluronic L64 and Pluronic F68—are available in pilot quantities. Pluronic F68 is in the form of free-flowing white flakes, 100% active. For complete information, use the coupon.

**Pluronic F68.** First commercially available 100% active agent nonionic detergent in free-flowing flake form.

## PLURONICS OFFER FOUR ADVANTAGES

1. Because of their ether type structure, Pluronics are extremely stable to acids, alkalies and electrolytes.
2. Pluronics are effective in low concentrations, with resulting savings in materials.
3. Pluronics are practically nonfoaming under use conditions.
4. Pluronics promote complete rinsability, help to get soap out (if there is soap) and rinse freely themselves.

### PLURONICS WITH WOOL

When properly built with alkaline or neutral salts, the Pluronics are recommended for raw wool scouring. Where lanolin is recovered, the use of a Pluronic of a relatively low degree of emulsifying power results in easier lanolin recovery.

Pluronics show promise as dye leveling assistants. Their stability to acids and metal salts also suggests their use as wetting agents for wool carbonizing and fulling.

### PLURONICS WITH RAYON, SILK AND NYLON

The Pluronics offer effective use in scouring silk, nylon and rayons.

At low concentrations, the Pluronics are effective agents for the removal of many sizes.

### PLURONICS WITH COTTON

In the manufacture of cotton fabrics, the Pluronics have shown their usefulness in many applications including kier boiling, desizing, boiling off, dye leveling and soaping off.

Wyandotte
REG. U. S. PAT. OFF.

**DEVELOPMENT DEPARTMENT,** AD-10

**WYANDOTTE CHEMICALS CORPORATION, Wyandotte, Michigan**

Please send me Pluronics booklet and additional information on their use in .....

**Name** _____

**Company** _____

**Address** _____

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Back of these symbols are 114 years of experience in producing constantly improved products for the American home and for industry. Back of these symbols is an organization with tremendous research facilities, employed to improve constantly its established products and to bring forth new ones to meet changing needs.

Whatever your processing needs may be, there is a Procter & Gamble product of top quality geared to meet them. Built into each of these products are the necessary ingredients to help improve the quality and saleability of your product, smooth out production wrinkles and save you money. We welcome the opportunity to prove this to *your* satisfaction.

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Textile Finishes Sales Department

Cincinnati, Ohio

***Serving industry and the public for 114 years.***

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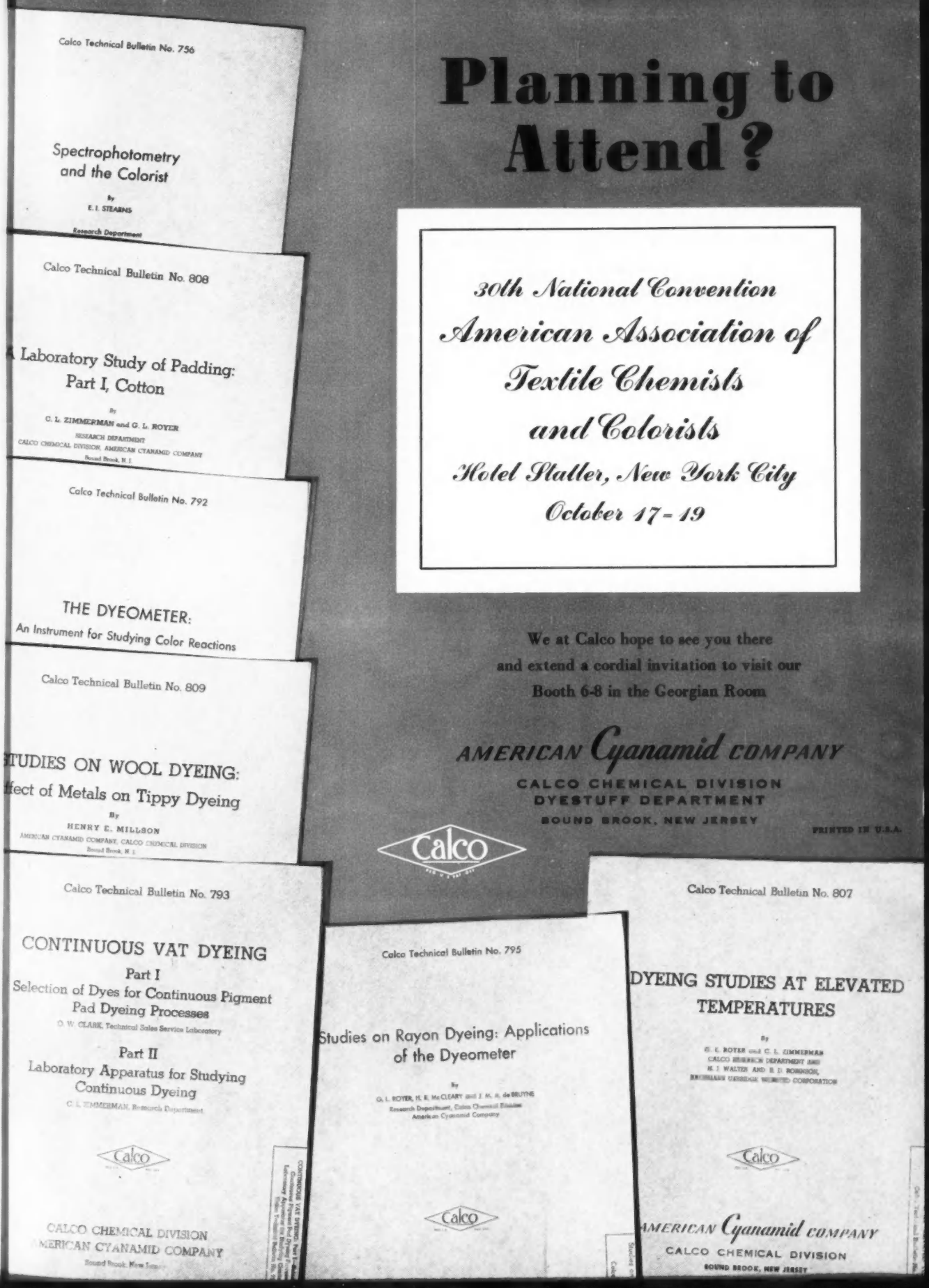
October 1, 1951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*30th National Convention*
*American Association of Textile Chemists and Colorists*
*Hotel Statler, New York City*
*October 17-19*

We at Calco hope to see you there and extend a cordial invitation to visit our Booth 6-8 in the Georgian Room

AMERICAN Cyanamid COMPANY
CALCO CHEMICAL DIVISION
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BOUND BROOK, NEW JERSEY

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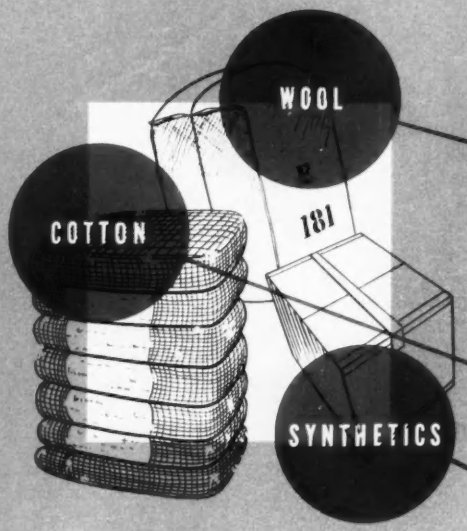
## National Aniline D

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AMERICA'S LEADING SYNTHETIC DETERGENT

for lower cost wet-processing of any fiber or mixture. It's the balanced synthetic detergent with just the right combination of properties for fast, complete wetting, emulsifying, penetrating and washing . . . proved by more years of use in more mills than any other detergent.

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for *Color* that stimulates sales. In your new lines, let National Technical Service provide exact matches and economical formulas. And for your everyday needs, phone National Aniline for prompt delivery from nearby warehouse stocks.

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to many, many more years

of mutual friendship

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**THE WILLIAMS HOT OIL DYEING PROCESS**

**SONNEBORN WHITE MINERAL OILS**

Achieved by Sonneborn RESEARCH

***Laboratory Tested and Approved for The Williams Hot Oil Dyeing Process, Sonneborn Highly Refined White Mineral Oils Possess These Essential Properties:***

- **BETTER THAN U.S.P. ACID TEST**
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  ... outstanding stability results in high resistance to color and odor development
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THE FIRST REFINER OF MINERAL OILS IN THE UNITED STATES

# ATLANTIC CHEMICAL CO., INC.

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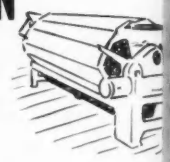
PRESENTS

*A Digest Review of 1951 Product Progress*

BETTER TEXTILE PROCESSING THROUGH *Better Textile Chemicals*

ATCO PRODUCTS

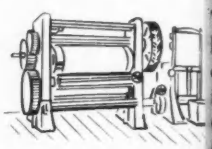
## ATCOZYME H SOLUTION



**FOR EFFECTIVE AND MORE RAPID DESIZING OF COTTONS AND RAYONS AT HIGHER TEMPERATURES.**

This is a new type ameolytic and proteolytic enzy product for desizing cottons and rayons. A heat gen ating type enzyme, this solution has outstanding s bility to high temperatures. Tests at 160°F. For hours showed an activity loss of only 25% as compar with 90% to 100% drops in other commonly us enzyme solutions. Practical desizing with this produ has been recorded at temperatures ranging from 130° to 180°F. This product lends itself easily to the rap pad steam method of desizing as well as the more co mon methods.

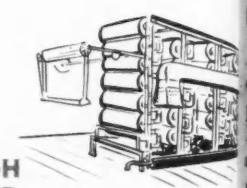
## ATCOPERM R



**RESIN MODIFIER GIVES DURABLE STIFFNESS—INCREASE ABRASION.**

Designed for use with U. F. and Melamine Formald hyde resins. In the drying and baking process, ATC PERM R attaches itself to the resin molecule, givi a lasting stiffness and a more abrasion-resistant finis This modifier does not interfere with crease resistan or shrinkage control. It does permanently increa firmness and fullness. Application is simple. ATC PERM R is dissolved in the resin bath after it has be made up to volume and the resin process proce as usual.

## ATCO-DRI 33



**EXCEPTIONALLY HIGH SPRAY RATING NOTED ON GOVERNMENT AND CIVILIAN FABRICS**

A zirconyl and aluminum salt wax emulsion compou made with high melting waxes. Designed specifica for water repelling fabrics with a low pick-up, such cotton ducks and other tightly twisted cottons. Gi high water repellency in low concentrations a imparts a very high hydrostatic pressure resistant f

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ATCO

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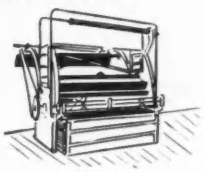
ATCO

FOR EC ENING ING.

Atco Resi eners for plasticize Melamine softness t sistance o harshness filament Large mi proved th Softener the forma storage. Being a li

ish. ATCO-DRI 33 meets all demands of newly written government specifications, which common wax, emulsion aluminum acetate water repellents will not pass. This emulsion dissolves easily in water at 160°F. 5% dilutions will produce a 100 spray rating on tightly woven balloon cloths and ducks. Can be applied from 120°F. to 200°F. and will stand heating with live steam without breaking or separating.

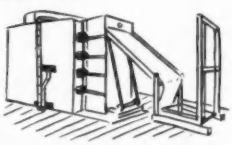
## ATCO WATER REPELLENT WM



**FOR ONE BATH WATER-PROOFING AND MILDEW-PROOFING UNDER ARMY AND NAVY SPECIFICATIONS.**

This product was developed expressly to meet combined army-navy requirements on cotton duck and other fabrics calling for waterproof-mildewproof finish. It contains 26% wax and 6.6% dihydroxy dichloro diphenylmethane. It is a one-package product that can be used to impart 1% to 1.5% dihydroxy dichloro diphenylmethane onto a fabric and enough wax and aluminum salts to give 100 spray ratings and a very high hydrostatic pressure rating. Can be applied from one bath at 160°F. to 180°F. On D. O. number and contract number only at present because of government allocation of dihydroxy dichloro diphenylmethane.

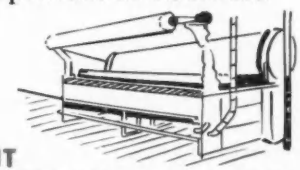
## ATCO RESIN SOFTENER UF



**FOR ECONOMICAL SOFTENING IN RESIN FINISHING.**

Atco Resin Softener UF is a new development in softeners for resin finishing. It acts as a softener and plasticizer when used with Urea Formaldehyde and Melamine Formaldehyde resins and imparts durable softness to resin finishes without affecting crease resistance or stabilization. It has the tendency to reduce harshness and brittleness of the fibers, and on some filament fabrics its use increases the tearing strength. Large mill runs and extensive laboratory tests have proved that resin finishes softened with Atco Resin Softener UF are free from odor and are protected from the formation of amine odors and discoloration during storage. It is an extremely economical resin softener. Being a liquid, it can be dissolved into resin baths by merely stirring in, thus eliminating any possibility of specks or spots that are caused by some of the thick and hard to dissolve softeners prevalent on the market.

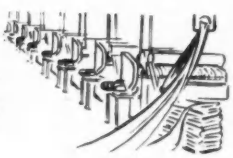
## ATCO CSN



**SOLVENT DETERGENT COMPOUND FOR REMOVAL OF GREASE AND OIL STAINS AND OILY DIRT.**

A new product containing emulsifier and detergent along with 40% dry cleaning solvent. Can be diluted with water at any desired concentration so that a solvent cleaning and scouring action can be carried out simultaneously without fire hazards. This product can be used alone or in combination with other boil-off compounds and is very effective in the removal of gray mill oil, grease spots and oily dirt.

## ATCOSENE CCF



**INACTIVATES METALLIC IONS IN DYEING AND SCOURING.**

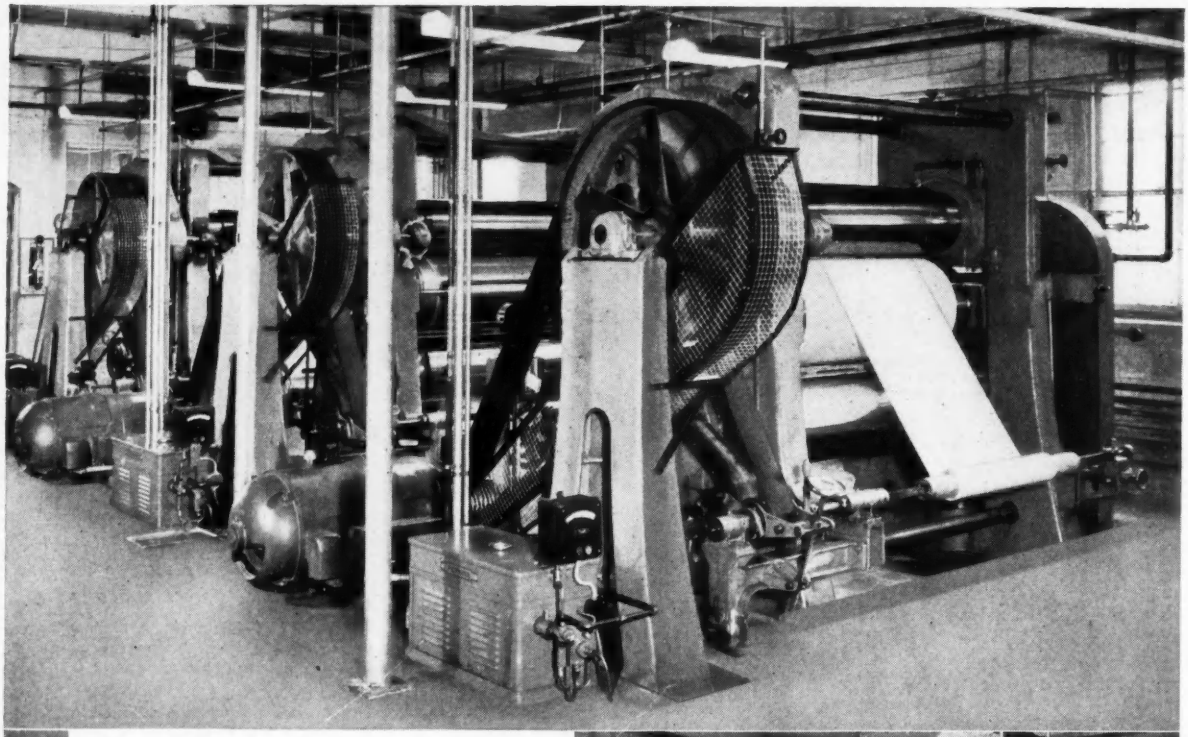
ATCOSENE CCF is a new chemical compound that inactivates calcium, magnesium and ferric or ferrous ions in dye solutions or detergent solutions. Increases stability of soap and detergent baths and prevents formation of metallic soaps. Prevents reaction of metals with dyestuffs and thus eliminates dulling of shades due to metallic ions present in dye solutions. It stops the oxidation of sulfonated oils and prevents livering in print pastes and gum solutions. A small quantity of ATCOSENE CCF is dissolved in the scouring solution or the dye solution before the detergent or dyestuff is added.

***This is a drastically condensed review of 1951 product progress accomplished in ATCO's laboratories and in their 125,000 square feet of manufacturing space devoted exclusively to better textile chemicals for better textile processing.***

***You will be welcome at ATCO's AATCC display booths (Nos. 27-28) at the Textile Exposition in New York—October 17-19, 1951.***

**Complete technical data**
on all ATCO products reviewed on these pages are available upon request. Address:

**ATLANTIC CHEMICAL CO., INC.**
Technical Service Department, Centredale, R. I.
Warehouse and Offices
Canada: Granby, Quebec • New Jersey: W. Paterson
South Carolina: Greenville



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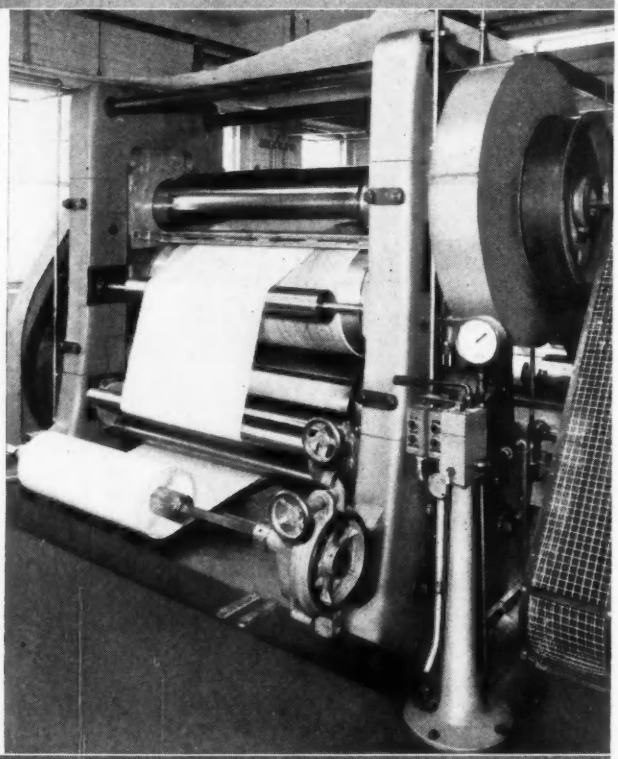
**"Smoothest running friction calender ever built"**

Battery of three Perkins Friction Calenders incorporating new and proven ideas which contribute to smooth operation and high efficiency; roller bearings leakproof for life-time—seals eliminated; hydraulic equipment with built-in accumulator, self-contained in compact housing; friction drive by chain, easily adjustable for any friction percentage desired; all other details of construction up to the highest standards of engineering.

**CLEANLINESS SMOOTHNESS NOISELESSNESS**



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LARGEST MANUFACTURERS OF CALENDER ROLLS IN THE WORLD

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## . . . for Geigy's exhibit of these important developments:

● ***New*** • • • optical bleaches by the originators of Tinopal* BVA.

**TINOPAL WGA** for true whites on wool and nylon. Suitable for application in the peroxide bleach bath!

**TINOPAL ANA** for acetate and nylon. Whites with excellent fastness properties.

● ***Versatile*** • • • the stable sequestering agent, *Sequestrene*, to improve results in a variety of scouring, bleaching and dyeing operations.

● ***Promotable*** • • • the *MITIN*† *Durable Mothproofing* miniature "clothes closet" display recently used with outstanding success by Macy's.

● ***Plus*** • • • a number of applications of Geigy quality dyestuffs to interesting dyeing problems of timely significance.

Be sure to visit Geigy's display at the convention. There will be items of interest to everyone in the textile dyeing and processing industry.

* *Reg. U. S. Pat. Off.*
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*Dyestuff Makers Since 1859*

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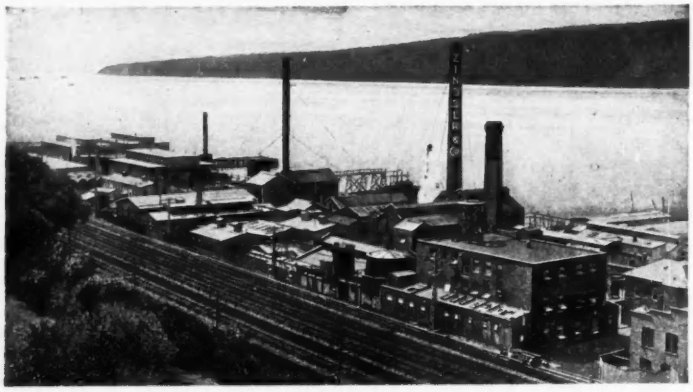

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ACETATE
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ORGANIC PIGMENTS
— For Cotton Printing and Dyeing —

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GALLIC ACID
PYROGALLIC ACID

ZINSSER & COMPANY, Inc.
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*Manufacturing Chemists*
HASTINGS-ON-HUDSON NEW YORK

**You've heard this before! . . ."One urea-formaldehyde paste is like another." We've heard it, too, and we feel that the AATCC Convention is a good place to nail this "tall story" to the ground!**

**At Booth 95 you'll find a friendly reception, of course. And you'll also find a desire to point out some of the nice things our customers tell us about Onyx NCF Paste.**

**Let us give you facts and figures that will convince you on the following counts:**

- **Any resin finish of this type that polymerizes in storage imposes needless processing difficulties. NCF Paste has better stability in storage than most competitive types.**
- **Because of its ideal consistency for handling and dissolving, NCF Paste will save you much time and trouble in processing.**
- **If you have difficulties with odors in processing . . . or worse still, with odor development on processed goods . . . remember that NCF Paste has always given much less trouble with odors.**
- **As far as the finish is concerned, we believe—and users will concur—that the hand you get with NCF Paste is definitely superior.**

***Stop in at Booth 95 and let's get down to brass tacks on Onyx NCF PASTE!***

**onyx** **CHEMICALS FOR DYEING • FINISHING • PRINTING**

**ONYX OIL & CHEMICAL COMPANY**
**TEXTILE DIVISION**
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# print **brighter** colors with this new, non-corrosive, acid-forming catalyst

**Now you can print brighter, sharper, clearer colors on silk, cotton, rayon and linen with vat soluble ester printing pastes . . . if you use Pfizer Ammonium Gluconate as the acid-forming catalyst.**

**This stable, non-toxic, non-corrosive salt reacts upon steaming to yield an efficient, non-volatile medium. Brilliant prints result from the ability of Ammonium Gluconate to:**

1. **make more stable pastes.**
2. **inhibit the dulling action of metallic ions by its sequestering action.**
3. **develop greater color value.**

**Pfizer Ammonium Gluconate is available as a dry, free-flowing, odorless, readily soluble powder in 50 and 100-lb. drums and in 250-lb. barrels. Write today for samples, prices and Technical Bulletin No. 6.**

# PFIZER®

# AMMONIUM GLUCONATE

**AMMONIUM OXALATE • FERRIC AMMONIUM OXALATE • FERRIC POTASSIUM OXALATE**
**FERRIC SODIUM OXALATE • FERRIC OXALATE • POTASSIUM OXALATE**

**CHAS. PFIZER & CO., INC., 630 FLUSHING AVE., BROOKLYN 6, N. Y.; 425 NORTH MICHIGAN AVE., CHICAGO 11, ILL.; 605 THIRD ST., SAN FRANCISCO 7, CALIF.**

Alas, my friends, let's doff our hat
For here lies Wool that's dead and flat!
Its size is shrunk—it's just a stub...
A victim of the "Washtub Rub"!

But, science now has something magic
To avert a thing so sad and tragic!
Now wash that wool—fear not for size...
It'll never shrink—it's *Schollerized** !

U. S. and Foreign Patents Pending

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WRITE FOR ALL THE DETAILS OF SCHOLLERIZING AS APPLIED TO YOUR WOOL PRODUCT!

*Manufacturers of Scouring, Dyeing and Finishing Materials; Soaps, Softeners and Sulphonated Oils*

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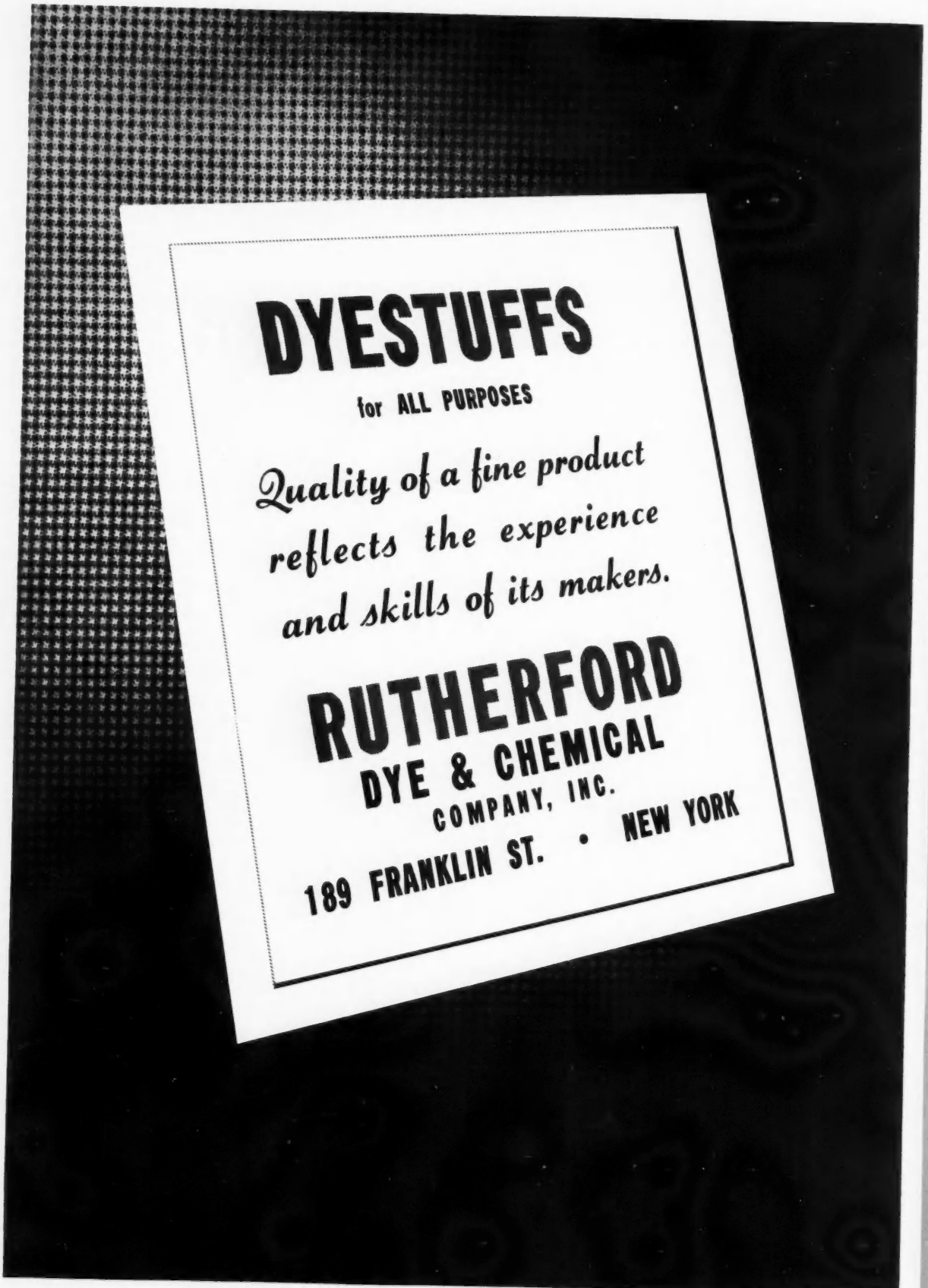
**SCHOLLERIZE...*The SAFE Wool Shrinkage Control Process***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for ALL PURPOSES
Quality of a fine product
reflects the experience
and skills of its makers.
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COMPANY, INC.
189 FRANKLIN ST. • NEW YORK

# "light soaping is enough!"

## —TO RINSE PRINTING THICKENER OUT COMPLETELY

AMBERFLO, a highly soluble printing thickener, deposits a soft print. Light washing rinses it out quickly. Easily. Completely. Using tap water. Result? Happier production men. And fabrics that warm a fashion designer's heart with their softness . . . sparkling color . . . finer hand and body.

AMBERFLO eliminates cooking, cooling and expensive mixing equipment. Simply blend it with chemicals and water. In a few minutes, the "color" is ready. Splitting is minimized on "Sheers" and other fragile fabrics, because it deposits a smooth, pliable film. Color yield is higher. Penetration and detail are excellent.

AMBERFLO is recommended for vat, rapidogen, direct, acid and acetate colors. Also white discharge.

National Starch Products,
270 Madison Avenue, New York 16, N. Y.

**National**
STARCH PRODUCTS

VISIT US **AATCC**
BOOTH #82

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*We want to know more!*

*We're interested in AMBERFLO—National's easy-rinsing, ready-for-use printing thickener.*

☐ *We want more technical data.*
☐ *We'd like a plant demonstration.*

**Name**_____ **Title**_____

**Company**_____

**Address**_____

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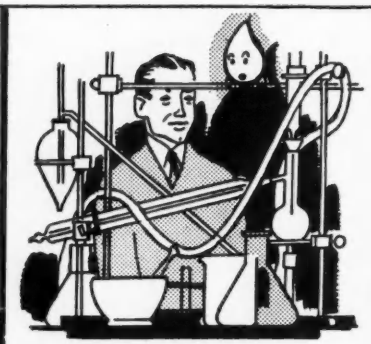
# PENN DRAKE® White Oils

## Will Give You *The Results Desired* in the

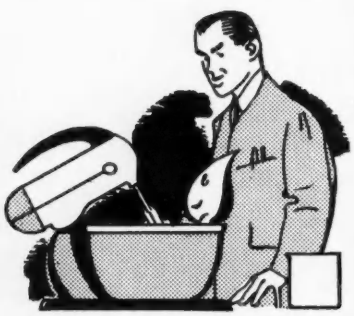
## Williams Hot Oil Dyeing Process

Accept our sample, turn it over to your chemist and let him analyze it most critically.



Try to detect some impurity or lack of stability.

Try to find some trace of odor, color or taste.



Compare its properties—point by point—with the material you are now using.

Check your findings against your specifications, or against your accepted standards for purity and performance.

Add up the score, compare the cost, and you will find you should be using Penn-Drake WHITE OILS!

Pure Penn-Drake White Oils also are supplied in grades for the processing of rayon and other synthetic fibres and for the formulation of yarn lubricants, finishing, coning and other oils. They are stable to heat and light.

If a regular White Oil won't do for you, write your own specifications and we will follow them exactly in giving you a White Oil with the "slightly different" characteristics you need.

*May we send our sample?*

penn drake products

**PENNSYLVANIA REFINING COMPANY**

**GENERAL OFFICES: BUTLER, PENNSYLVANIA**

Refinery at KARNS CITY, PENNSYLVANIA

Branches: Cleveland, Ohio; Edgewater, N. J. *Representatives in Principal Cities*

MAKERS White Oils (U.S.P., N.F. and Technical), Petrolatums (all grades and colors); INSECTI-SOL (deodorized insecticide base); Deodorized and other Naphthas; Petroleum Sulfonates; Waxes; Industrial and Motor Lubricants and Greases; Fuel Oils, and other petroleum products.

What's the One and Only Way to

# Make Direct Dyes Triple-Fast?

Only with CUPROFIX colors and after-treatment can you give direct-dyed fabrics satisfactory fastness to *sunlight* as well as *washing* and *perspiration.*

Particularly on dark shades, CUPROFIX gives cotton, rayon and blends a degree of *wet* fastness that compares favorably with more expensive vat dyes . . . and a much greater degree of *light* fastness than any other after-treatment.

Since CUPROFIX colors can challenge vat-dyed results . . . and they cost so little more than direct dyes—isn't it *smart business* to after-treat? And since CUPROFIX alone gives direct-dyed colors the extra saleability of *triple* fastness—isn't it *smart buying* to use CUPROFIX?

**Label Resin-Treated Garments "WASHABLE"**

Adding CUPROFIX to the resin bath increases fastness to washing sufficiently to permit labeling garments "washable" instead of just "dry cleanable". It also:

materially increases efficiency of the usual resin treatment

eliminates in many cases the effect of resin on light fastness.

*Get acquainted with CUPROFIX now—write us for Booklet U. S. 125. SANDOZ CHEMICAL WORKS, INC., 61 Van Dam Street, New York 13, N. Y.*

Fast to Light · Wash · Perspiration
Pressing · Cleaning

**CUPROFIX**

BY SANDOZ

**SANDOZ CHEMICAL WORKS, Inc.**

61 Van Dam Street, New York 13, N. Y. Application laboratories and stocks at Boston, Philadelphia, Charlotte, Los Angeles, Toronto. Other branches at Providence, Paterson, Chicago.

**SANDOZ** *thinks ahead with textiles*

SANDOZ

**research**
**pays its rich reward**

# WATSON-PARK COMPANY

**proudly announces**
**the new, exclusive**

# OGDEN PROCESS*

**. . . a process of simultaneously stripping and dyeing all types of reworked wool, in the stock or in the piece**

If you're a processor of wool — you know what simultaneous stripping and dyeing of wool would mean to you in savings of time, labor and fuel.

The Ogden Process compresses three separate steps — stripping, neutralizing, redyeing — into one, thereby requiring as little as one-third the time and fuel needed in the ordinary processing of reworked wools.

By greatly reducing the time in which the wool is exposed to steam or boiling, the Ogden Process leaves more strength and resiliency in the wool fibre, which in turn means more uniform yarns, stronger end products.

And the Ogden Process accomplishes all this with your existing equipment — without additional expense for chemicals.

## WATSON-PARK COMPANY

BALLARDVALE, MASSACHUSETTS

*Patent applied for

The Ogden Process is a process which Watson-Park Company, suppliers of DYOXOLATE dyes and LIQUID HYDRALDEHYDE ® Stripping Compound, has available for license.

# Efficient Detergent for Cotton Piece Goods

Whatever your method of dyeing and finishing cotton piece goods, there are numerous places where Monsanto Santomerse No. 1, the all-purpose detergent and wetting agent, can serve you efficiently. It aids in giving fabrics a good bottom, assists in level dyeing. It reduces crocking and prevents insoluble metallic curds which cause spotting.

Among the varied uses of versatile Santomerse No. 1 are scouring after singeing . . . in the souring bath . . . in J boxes . . . in jigs . . . in scouring after kiering, bleaching, printing or acid aging . . . in high-speed continuous units.

Santomerse No. 1 is an alkyl aryl sulfonate, with a minimum of 40% active ingredient. It is a highly efficient detergent, wetter and penetrant. It holds particles of soil and unattached dyestuffs in suspension so they are whisked away in the rinse. Santomerse No. 1 is efficient in hard or soft water . . . in hot or cold solutions . . . in acid or alkaline baths. Santomerse No. 1 is an anionic detergent and prevents the formation of insoluble metallic curds in hard water.

For information on the use of Santomerse No. 1 in any textile operation requiring a detergent or wetter, contact the nearest Monsanto Sales Office or write MONSANTO CHEMICAL COMPANY, Phosphate Division, 1700 South Second Street, St. Louis 4, Missouri.

## WHERE SANTOMERSE No. 1 SERVES TEXTILE INDUSTRY

### RAWSTOCK

Cotton: Kier boiling, scouring, bleaching, dyeing.

Wool: Carbonizing, dyeing.

### YARN

Cotton and Synthetic Fibers: Wetting out, dyeing, bleaching, scouring.

Wool: Carbonizing, scouring, dyeing.

### PIECE GOODS

Cotton and Synthetic Fibers: Kier boiling, enzyme desizing, scouring, boiling off, bleaching.

Wool: Dyeing, scouring.

### HOSIERY

Dyeing, scouring, bleaching, after treatment.

## MONSANTO PHOSPHATES FOR TEXTILE INDUSTRY

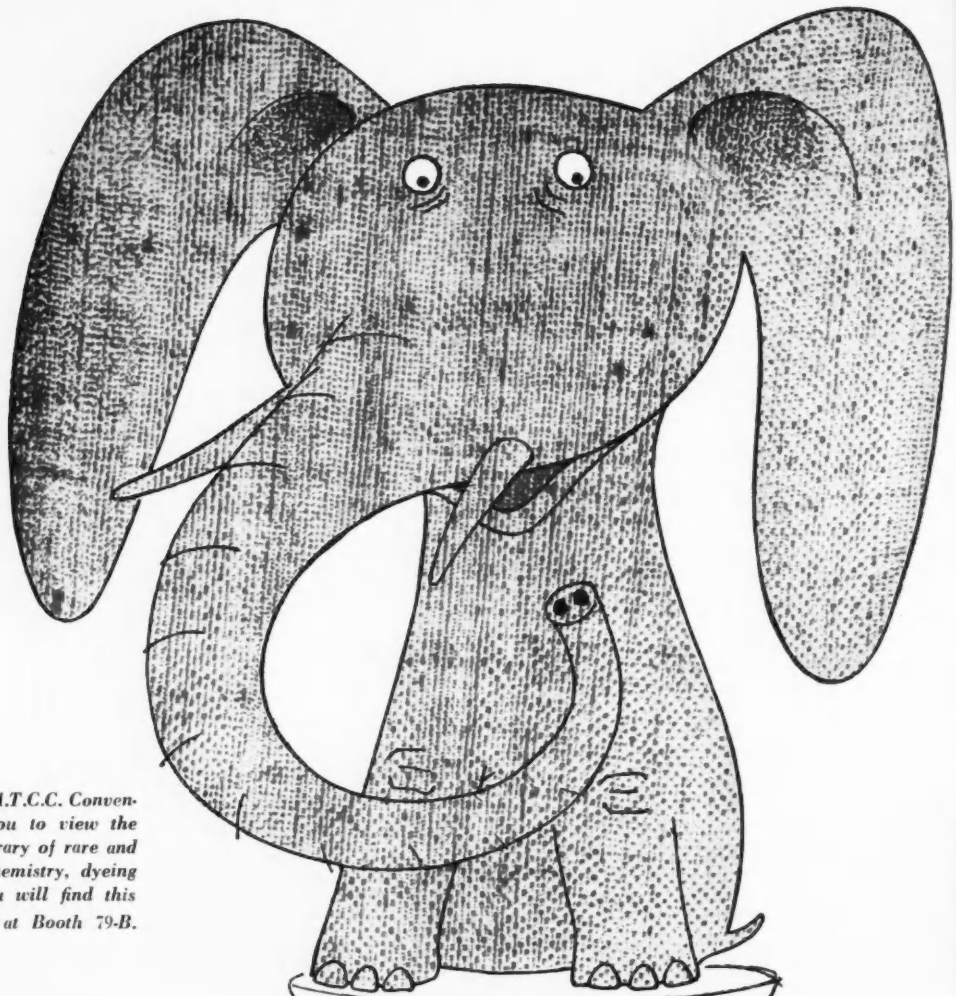
Mono Sodium Phosphate
Di Sodium Phosphate
Tri Sodium Phosphate
Tetra Sodium Pyrophosphate
Sodium Tripolyphosphate

DISTRICT SALES OFFICES: Birmingham, Boston, Charlotte, Chicago, Cincinnati, Cleveland, Detroit, Los Angeles, New York, Philadelphia, Portland, Ore., San Francisco, Seattle. In Canada, Monsanto (Canada) Ltd., Montreal.

*Santomerse: Reg. U. S. Pat. Off.*

MONSANTO
CHEMICALS AND PLASTICS

SERVING INDUSTRY . . . WHICH SERVES MANKIND



*Welcome to the A.A.T.C.C. Convention. We invite you to view the famous Dexter Library of rare and great works on chemistry, dyeing and bleaching. You will find this interesting exhibit at Booth 79-B.*

# TAMING TEXTILES ... CHEMICALLY

is strictly a job for Specialists.

You are the *specialist* whose own skills and standards contribute to a finely processed fabric.

We are the *specialists* whose chemical specialties can complement your work.

In 97% of the trial runs made with a Dexter chemical specialty, *improved processing* is the result.

If you are on the alert for improvement, or, if you have an unanswered problem, let us assist you.

DEXTER

INDUSTRY'S RIGHT HAND

**DEXTER CHEMICAL CORP.**

**TEXTILE CHEMICAL DIVISION**

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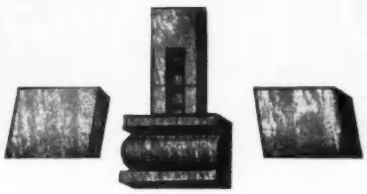
**SPECIALISTS IN CHEMICALS FOR WOOL, COTTON, RAYON AND ALL SYNTHETICS**

# Master Color



VINCENT VAN GOGH

1853-1890

Van Gogh's genius with pure color has never been equalled. His paintings were splashed with vivid hues glorifying nature, the favorite colors being green, yellow in all its ranges, Prussian Blue, violet and pink. Half a century after his death, his paintings still enrich those who look upon them.

Modern color chemistry allows us to offer a wider range of hues that not only please the eye, but are remarkably efficient in their application. Besides meeting precise shade requirements, we must provide industry with color characteristics that mean lower processing costs, greater adaptability and special affinities for new fibres, all adding up to greater dyeing and printing efficiency and, ultimately, greater consumer satisfaction.

**NOVA VAT PRINTING BLACK AN Paste New**

**NOVA VAT BRILLIANT INDIGO 4G Paste**
**NOVA VAT BRILLIANT INDIGO 4BR Paste**
**NOVA VAT PRINTING SCARLET GGN Paste**
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**NOVA VAT ORANGE R Paste**

**NOVANTHRENE BRILLIANT PINK R Paste**
**NOVANTHRENE GOLDEN YELLOW GK Double Paste**
**NOVANTHRENE YELLOW GC Paste**
**NOVANTHRENE KHAKI 2G Double Paste**
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**Eastman Black GS**
**Eastman Black SN**
**Eastman Blue BNN**
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**Eastman Fast Blue GLF Conc.**
**Eastman Diazo Black DB**
**Eastman Direct Black EC**
**Eastman Direct Navy Blue EC**
**Eastman Direct Navy Blue LB**
**Eastman Fast Violet 3R-GLF**
**Eastman Fast Violet 5RLF**
**Eastman Fast Yellow GLF**
**Eastman Fast Yellow 8GLF**
**Eastman Fast Yellow 4RLF**
**Eastman Orange GRN Conc.**
**Eastone Blue BGF**
**Eastone Brown 2R**
**Eastone Fast Red GLF**
**Eastone Orange 2R Conc.**
**Eastone Orange 3R**
**Eastone Red B**
**Eastone Red R**
**Eastone Red R Conc.**
**Eastone Rubine C**
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**Eastone Scarlet BG**
**Eastone Violet BGF**
**Eastone Yellow GN Conc.**
**Eastone Yellow RN Conc.**
**Eastone Yellow 5G Conc.**
**Eastone Yellow 6GN Extra Conc.**

Eastman Acetate Dyestuffs are sold in the United States through Tennessee Eastman Company in Kingsport, Tennessee, and Lodi, N. J. On the West Coast, through Wilson Meyer Co.: San Francisco, Los Angeles, Portland, and Seattle. In Canada, through Clough Dyestuff Company Ltd., 33 St. Mathieu Street, St. Laurent, Quebec.

# astman

*Tennessee Eastman Company maintains fully equipped laboratories staffed with experienced and qualified research personnel both in Kingsport, Tennessee and in Lodi, New Jersey. These laboratories are organized for the express purpose of assisting the individual dyer. We welcome the opportunity of working with you on your specific acetate and nylon dyeing problems.*

# yestuffs

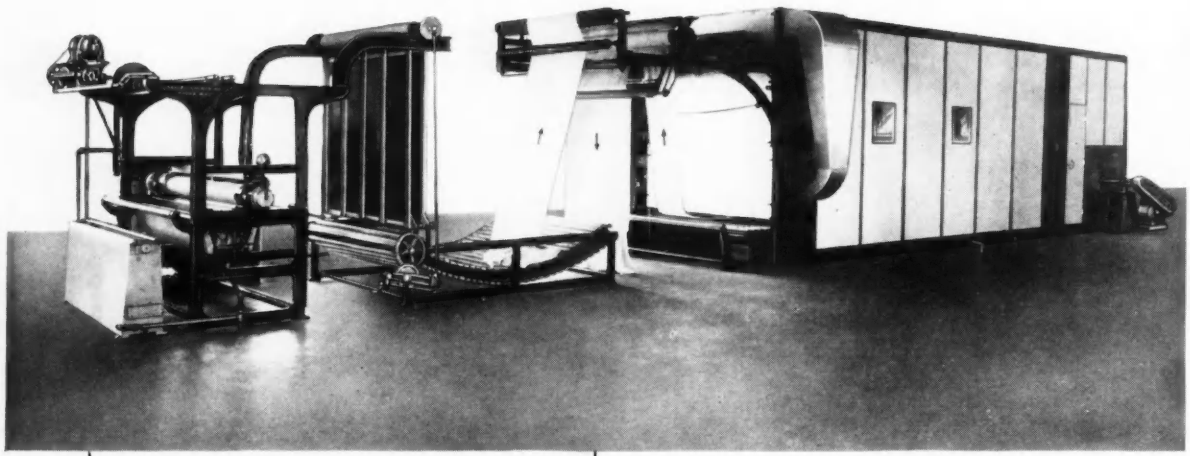
Tennessee astman Company

Division of Eastman Kodak Company
KINGSPORT, TENNESSEE

# GESSNER'S Shrinking Outfit SHRINKS and PROOFS Knit Goods to Your Requirements

Knit goods finishers are taking a leaf from the experience of those who are so successfully proofing and shrinking worsteds and gabardines with Gessner's Cold Water Shrinking Unit. From the two dip tanks filled with whatever proofing compounds are desired, and after being allowed to relax thoroughly, the fabric enters the drying chamber.

Gessner's unique, temperature controlled air flow system blows air horizontally along the cloth, laying loosely without any tension, as it travels and flutters over the dryer's 10 level slat aprons.



## SHRINKS, WATERPROOFS, MOTH PROOFS or CREASE-PROOFS

**A detailed model of the Gessner Shrinking Unit will be on display at our BOOTH, NO. 80 for your examination. We hope you will want to stop and ask questions.**

**DAVID GESSNER CO.**
**Worcester, Massachusetts**
IMPROVED CLOTH FINISHING MACHINERY
Canadian Representative: W. J. Westaway, Montreal, Quebec; Hamilton, Ont.

# Save this 1-STOP check chart of textile chemicals

| APPLICATION | NAME | COTTON | RAYON | WOOL | NYLON | SILK | LINEN | CHEMICAL NATURE |
|---|---|---|---|---|---|---|---|---|
| ANTI-SLIP | WEAVE-LOK* | | X | | X | | | water-soluble processed natural resin |
| ANTI-SLIP | FORMASET* HG | | X | X | X | | | inorganic polymer semi-durable |
| COATING | | | | | | | | |
| NON VOLATILE | PLASTISOL | TEXTILES, PAPER | | | | | | vinyl resin dispersions |
| VOLATILE | ORGANOSOL | TEXTILES, PAPER | | | | | | vinyl resin dispersions |
| COLOR FIXATIVE | WARCOFIX* | X | X | X | X | X | X | quarternaryammonium compound |
| COLORS, DISPERSED | SUNTONE* | VINYL | | | | | | pigments dispersed in resinous and chemical plasticizers |
| COLORS, PAD DYEING | SUNTONE* | X | X | X | X | X | X | dispersed pigments and resinous binders |
| COLORS, PRINTING | SUNTONE* | X | X | X | X | X | X | dispersed pigments and resinous binders |
| COLORS, PRINTING | SUNTONE* | PLASTICS | | | | | | dispersed pigments and resinous binders |
| FINISHES | | | | | | | | |
| BODYING AGENTS | SETOLE* AF | X | | | | | | aqueous dispersions of thermo-setting resins |
| CRUSH RESISTANT | FORMASET* SN | | X | | | | | methylolurea type thermo-setting resin |
| DULLER | ANTILUSTEROLE* | | X | | X | | | aqueous dispersion of inorganic pigments |
| FIRE RETARDANT | WARCONYL* A | X | X | | | | | blend of inorganic salts |
| GLAZING (DURABLE) | FORMASET* 10-D | X | | | | | | dimethylurea-ether polymer |
| GLAZING (DURABLE) | FORMASET* SN | | X | | | | | methylolurea type thermo-setting resin |
| MILDEW PROOFING | KUPRATE* | X | X | X | X | X | X | solubilized copper 8 quinolinolate |
| MILDEW PROOFING | G-4 EMULSION-20 | X | X | X | X | X | X | emulsion containing 20% G-4. Compatible with emulsion-type water repellents. |
| RIBBON FINISH | SETOLE* D EXTRA | | X | | | | | water-soluble alkyd resin |
| SEWABILITY FINISH | WARCO* A 221 | X | | | | | | non-ionic emulsion |
| SHRINK RESISTANT | FORMASET* SR | X | X | | | | | ketone aldehyde type thermo-setting resin |
| SHRINK RESISTANT | FORMASET* SN | | X | | | | | methylolurea type thermo-setting resin |
| SHRINK RESISTANT | FORMASET* 10-D | | X | | | | | partially polymerized urea-formaldehyde type resin |
| SHRINK RESISTANT | FORMASET* C | X | X | X | X | | X | controlled formalizer of fibers—highly wash resistant |
| SOFTENERS | | | | | | | | |
| ANIONIC | APPRETOLE* | X | X | | | | X | alkyl amide dispersion |
| CATIONIC | APPRAMINE* | X | X | | X | | X | substituted fatty amide |
| HEAVY-BODIED | TORRIDEX* | X | X | | | | | sulfonated tallow |
| OXIDATION RESISTANT | WARCOLENE* 171 | X | X | | | | X | sulfated fatty acid ester |
| WATER REPELLENT DURABLE | NORANE* R | X | X | | | | | chloromethylated quaternary ammonium compound |
| WATER REPELLENT DURABLE | NORANE* W | | | X | X | | | wax emulsion plus metal salt complex |
| WATER REPELLENT RENEWABLE | IMPREGNOLE* | X | X | X | X | X | X | wax emulsion with polyvolent salts |
| GAS FADING INHIBITOR | WARCO* GFI | | X | | | | | high molecular weight amino compound |
| GAS FADING INHIBITOR | WARCO* GND | | X | | | | | mixed organic amines (non-durable type) |
| KIER BOILING COMPOUNDS | KIEROLE* | X | X | | | | X | sulfonated fatty acids |
| KIER BOILING COMPOUNDS | COLOROLE* | X | X | | | | X | sulfonated fatty acids |
| LUBRICANT (YARN, FABRIC) | WARCOLENE* | X | | | | | | solubilized oil |
| LUBRICANT | WARCO* A 221 | X | | | | | | non-ionic emulsion |
| PENETRANTS—REGULAR | WARCOSOL* | X | | | | | | sodium alkylnapthalenesulfonate |
| PENETRANTS—NON-FOAMING | WARCOSOL* NF | X | X | X | | | | blend of organic esters |
| PENETRANTS—MERCERIZING | EUMERCIN* | X | | | | | | cresylic and non-cresylic types |
| PIGMENT PRINT BINDERS | SUNTONE* CLEARS | X | X | | | | | emulsified resinous compounds |
| PIGMENT PRINT BINDERS | FORMASET* 20 | X | X | | | | | partially polymerized urea-formaldehyde resin |
| TAR AND GREASE REMOVER | LANOLE* | X | X | X | X | | | detergent solution in organic solvent |
| SYNTHETIC DETERGENT | SULFANOLE* KB | X | X | X | X | X | X | sodium alkylarylsulfonate |
| SYNTHETIC DETERGENT | SULFANOLE* CP | X | X | X | X | X | X | sulfated fatty amide |
| SYNTHETIC DETERGENT | SULFANOLE* S GEL Conc. | X | X | X | X | X | X | sulfonated fatty amide |
| SYNTHETIC DETERGENT | SULFANOLE* AN | X | X | X | X | X | X | fatty acid amine condensate |
| WETTING AND REWETTING | WARCOSAN*B Conc. | X | X | | | | | sodium alkyl ester sulfate |
| WOOL SCOURING | LANOLE* B | | X | X | | | | stabilized organic solvent soap compound |

*Trade Mark Reg.

You will find Warwick research-developed, market-proved textile chemicals in more than 20 major fields of application in the textile industry.

We suggest you use Warwick—one of America's largest chemical research and manufacturing companies built on a 5-d devoted to products for this industry—for all your chemical needs.

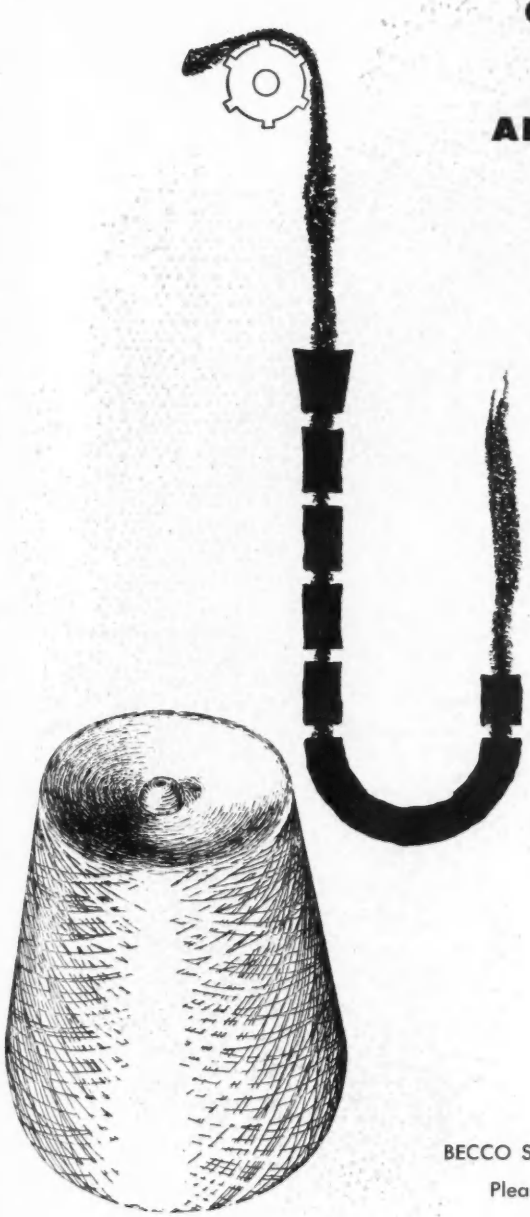
You'll enjoy high standards of performance, you'll be assured perfect compatibility between materials, and you can usually cut inventory, buying and book-keeping costs by using a single leading source.

Detailed technical information, samples and counsel on any Warwick product sent on request. Write, wire or phone . . .

**WARWICK**
CHEMICAL
COMPANY, DIVIS

the street and zip number, code * and City, New York

# USE BECCO HYDROGEN PEROXIDE
## OR PERACETIC ACID
## AND BECCO PROCESSES



**FOR** Continuous Bleaching
Kier Bleaching
Machine Bleaching
Jig Bleaching
Tub Bleaching
Cold Bleaching
Dry-In Bleaching

**OF** Cotton
Wool
Linen
Silk
Viscose Rayon
Acetate Rayon
Nylon
Straw
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BECCO SALES CORPORATION, Station B, Buffalo 7, N. Y.

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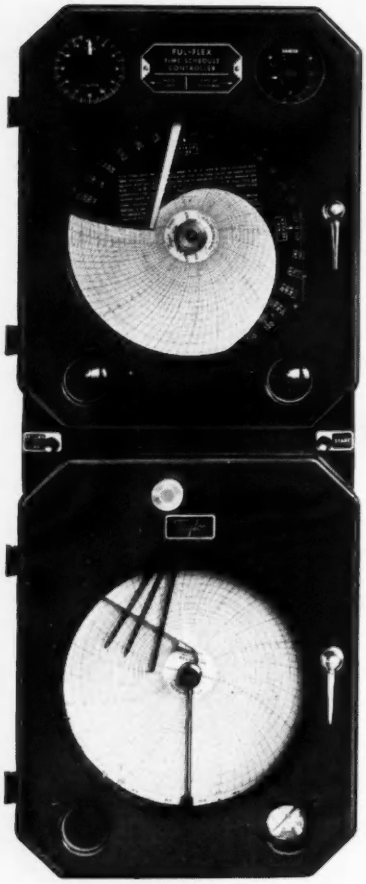
**Sales Agent for BUFFALO ELECTRO-CHEMICAL COMPANY, INC.**

**BUFFALO · BOSTON · CHARLOTTE · CHICAGO · NEW YORK · PHILADELPHIA**



# PUSH THIS BUTTON...

## and Get Better Dyeing at Lower Cost!

YOU can save money on any kind of dyeing and get more uniform dyeing every time, with Taylor's automatic FULFLEX* Time Schedule Recording Controller.

**1. No Cams to Cut.** Operator simply sets three dials for *any* rate of rise, hold temperature and hold time.

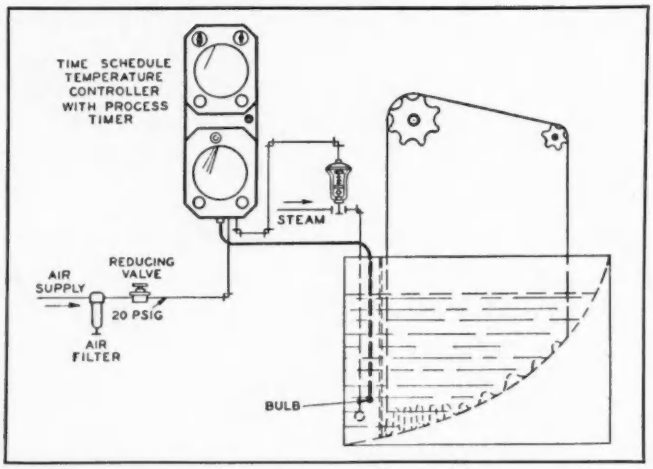
**2. Operator just presses the button** and Taylor Control signal light tells him when cycle is completed.

**3. Repeats any part of the cycle.** For additional rise and hold periods, if required, operator simply resets dials and presses the start button again.

**4. Controlled rate of cooling** is available as an optional feature.

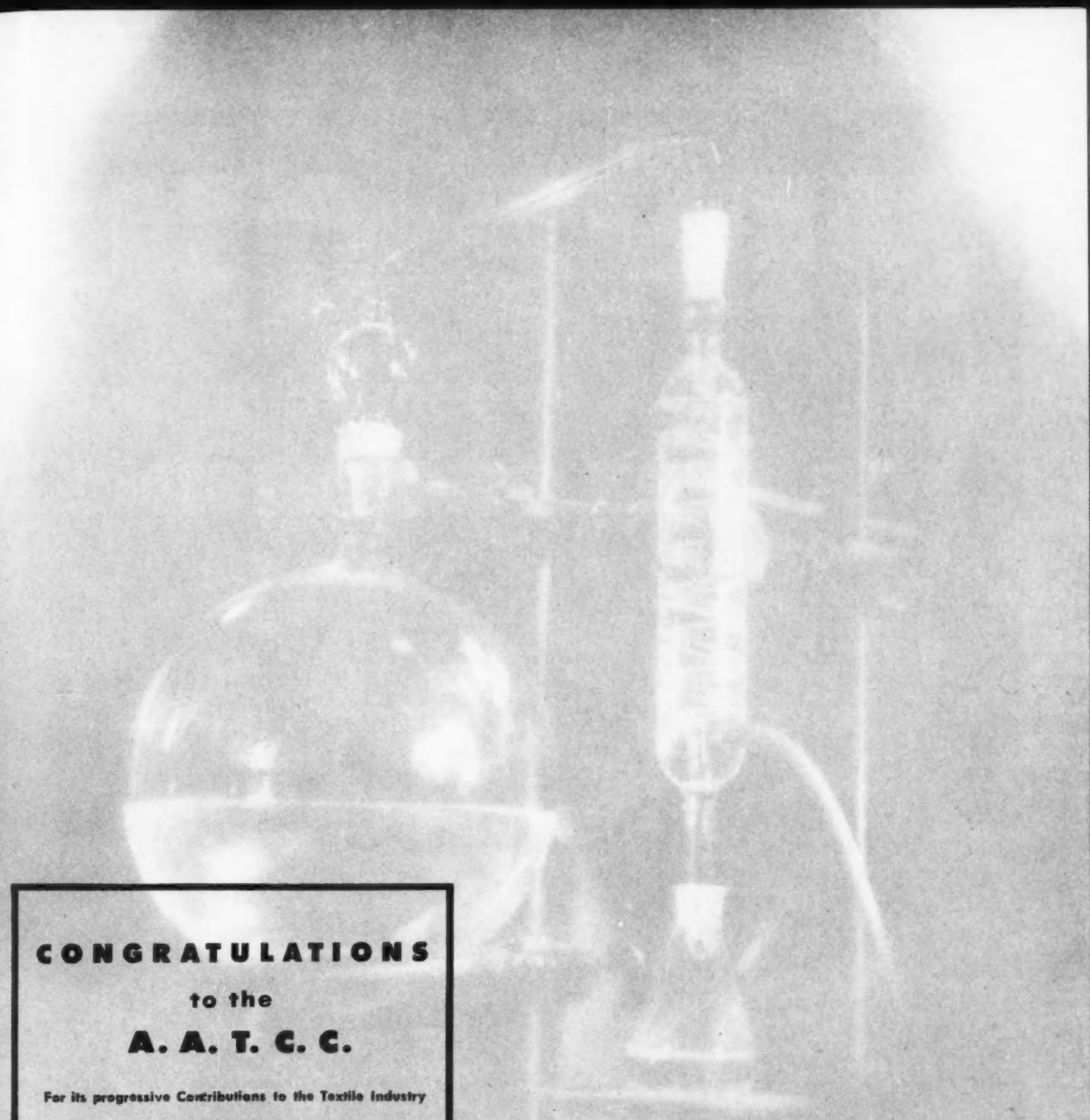
This is just a single example of how Taylor is cutting costs, and improving product for textile mills all over the country. For the whole story, write for BULLETIN 98199, Taylor Instrument Companies, Rochester, N. Y., or Toronto, Canada.

*Instruments for indicating, recording and controlling temperature, pressure, humidity, flow, liquid level, load, speed and density.* *Trade-Mark




## TAYLOR INSTRUMENTS MEAN ACCURACY FIRST IN:

PIECE DYEING
PACKAGE DYEING
BEAM DYEING
SKEIN DYEING
TOP DYEING



**CONGRATULATIONS**

**to the**

**A. A. T. C. C.**

**For its progressive Contributions to the Textile Industry**

Since 1901 Jacques Wolf & Co. has been actively engaged in anticipating and meeting the chemical needs of a wide group of industries. Those 50 years have seen many changes in materials and methods; and during that time Jacques Wolf & Co. has aimed to do more than just keep pace with the procession.

The growth of our company from its humble beginnings, its increased prestige and the esteemed confidence of our many friends are the result of a service well rendered. On this our 50th anniversary, we rededicate our company, its facilities and know-how to this service. Our aspiration is to continue to serve our customers intelligently, efficiently and to be ever ready for the next step ahead as the Textile Industry marches forward to new goals of achievement!

50th ANNIVERSARY 1901-1951

*Visit our Booth #76*

**JACQUES WOLF & CO.**

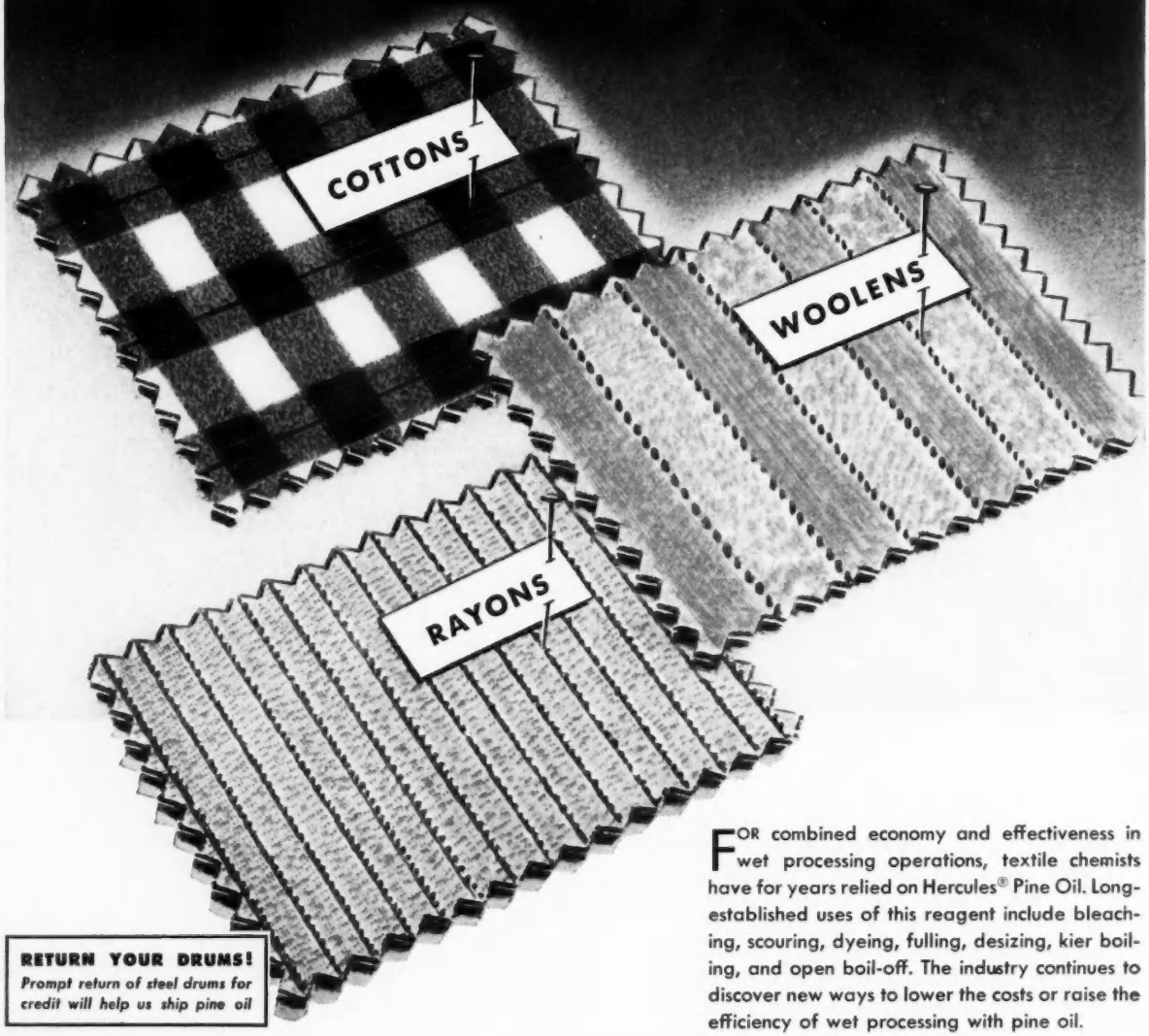
*Chemicals* PASSAIC, N. J.

Passaic, New Jersey Branches: Carlstadt, N. J. • Los Angeles, Calif.

# PINE OIL

## —the low-cost, time-tested reagent

## FOR WET PROCESSING

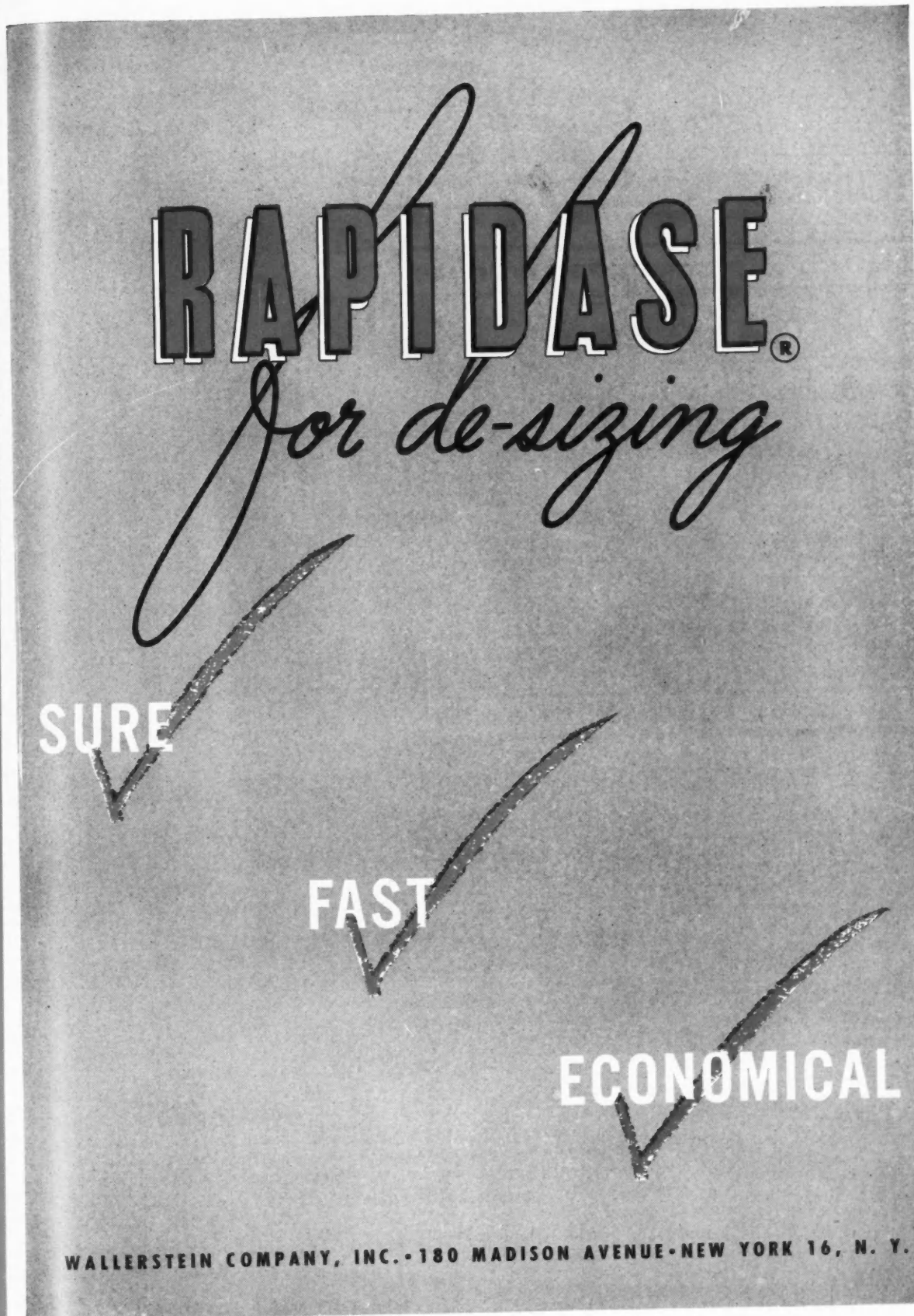



**RETURN YOUR DRUMS!**
*Prompt return of steel drums for credit will help us ship pine oil*

FOR combined economy and effectiveness in wet processing operations, textile chemists have for years relied on Hercules® Pine Oil. Long-established uses of this reagent include bleaching, scouring, dyeing, fulling, desizing, kier boiling, and open boil-off. The industry continues to discover new ways to lower the costs or raise the efficiency of wet processing with pine oil.

*HERCULES POWDER COMPANY* Naval Stores Department, 993 Market St., Wilmington, Delaware

NY51-1R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for de-sizing
SURE
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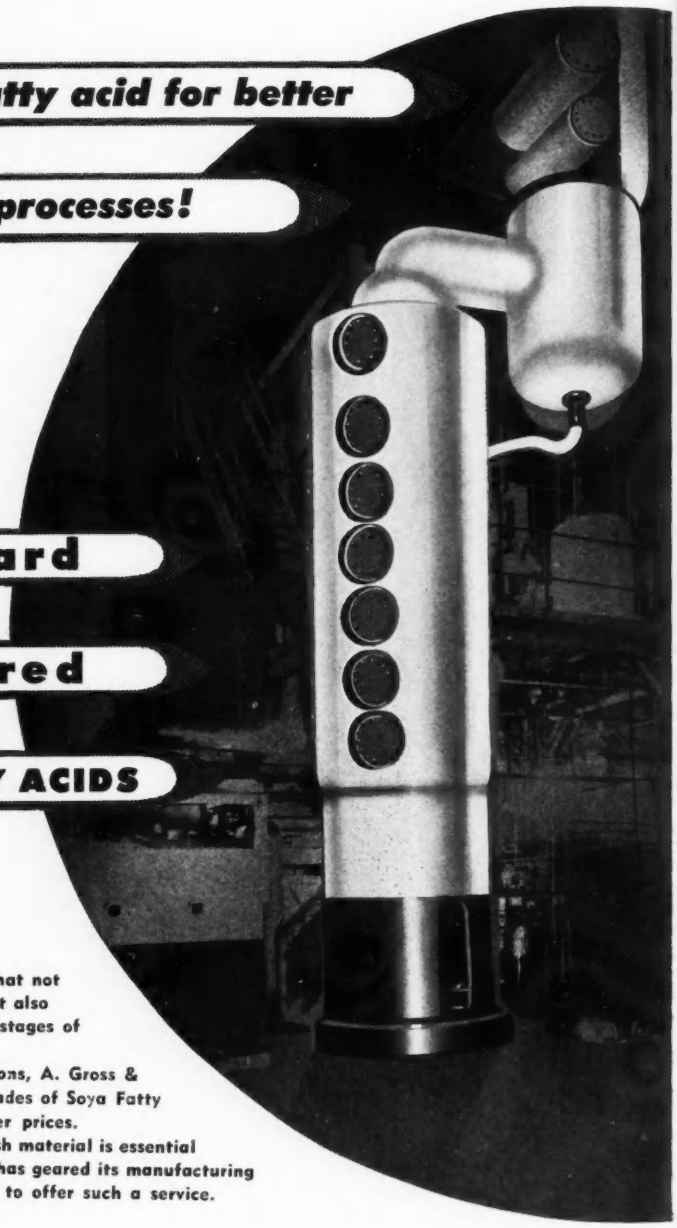
WALLERSTEIN COMPANY, INC. • 180 MADISON AVENUE • NEW YORK 16, N. Y.

**Another A. GROSS fatty acid for better products and processes!**



**Our springboard to lighter colored SOYA BEAN FATTY ACIDS**

NOW you can have a Soya Fatty Acid that not only has an excellent initial color, but also maintains that color throughout all stages of ALKYD manufacture.

For less demanding applications, A. Gross & Company also has two other grades of Soya Fatty Acid of proportionately lower prices.

Prompt shipment of fresh material is essential and A. Gross & Company has geared its manufacturing and shipping facilities to offer such a service.

Distributors in Principal Cities

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295 MADISON AVE., NEW YORK 17, N. Y.

*manufacturers since 1837. write for samples and our new booklet*

*"FATTY ACIDS IN MODERN INDUSTRY"*

# The MOST EFFICIENT Equipment

## FOR DYEING

1 2 3 4 5 OR 6

## BEAMS OR CARRIERS

## AT THE SAME TIME— IN THE SAME DYE BATH

Dyehouses now using Gaston County multiple-kier dyeing machines for 30 years recommend them for (1) uniform dyeing results, (2) simplicity of operation, (3) flexibility, (4) economy.

*Uniformity* — from 1 to 6 beams or package carriers are dyed at the same time, same dye-bath, same conditions of temperature, pressure and flow, thus giving *absolute uniformity and evenness of shade.*

*Simplicity* — all kiers are operated from one circulating pump. No block-off drums are necessary, since each kier can be cut-off from other kiers by valves. Control features include manual or automatic dye-liquor flow control . . . and the new electronic DYNAMASTER controls — unprecedented for accuracy, sensitivity, and simplicity of operation.

*Flexibility* — Multiple-kier set-ups may be easily rearranged into new combinations, to meet any change in production requirements. Machines are available for practically any size or design of carrier.

*Economy* — to save dyestuffs, the alteration in dye liquor ratio for any number of beams or carriers is held to a minimum. Operating kiers are positively blocked away from kiers not in use.

Write us, or ask our representative to explain fully the advantages of a Gaston County multiple-kier set-up.

**BOOTH 116**
**AATCC CONVENTION**

GASTON COUNTY

## GASTON COUNTY DYEING MACHINE CO.

Pioneers in Automatically Controlled Dyeing Machines

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614 St. James St., W. Montreal
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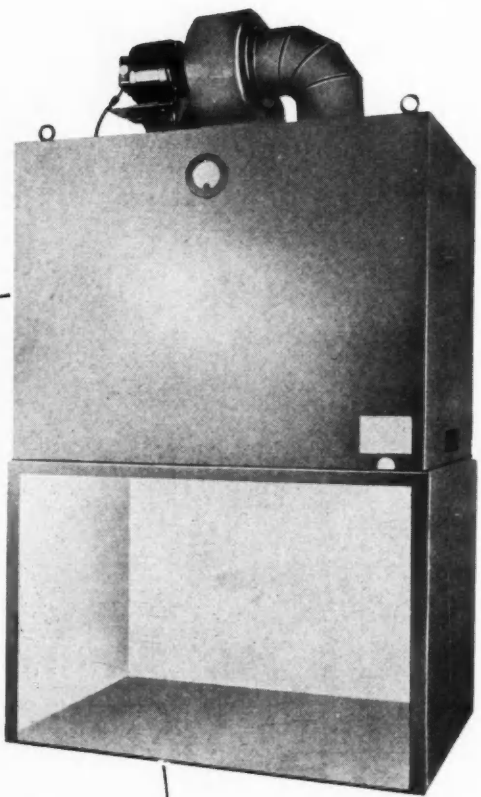
# Match Colors Right the First Time

## With the *Macbeth* Color Matching Skylight

- Speed Production
- Eliminate Color Rejects
- Obtain Product Uniformity
- Cut Dyestuff Waste
- Match 24 Hours a Day



Make sure of your color control with a Macbeth Color Matching Skylight, standard of the Textile Industry. Eliminate costly rejects due to faulty color matching. Speed up production with fewer hold-ups and 24 hour-a-day matching if necessary. Save by cutting down on dyestuff wastage through more accurate color control.

Macbeth Color Matching Skylights reproduce the proved, ideal quality of natural daylight for critical color matching, without the instability of natural daylight.

Many government agencies use Macbeth Color Matching Skylights, an important factor to firms working on defense contracts.

*Write for the new Macbeth Lighting Catalog*

***Visit Macbeth Booth 100, Hotel Statler, New York, Oct. 17, 18, 19***

A line of precision instruments important to the Textile Industry carry the Macbeth name. Line operated pH meters, continuously indicating, direct reading, both laboratory and industrial types, are available. The Macbeth Ansco Color Densitometer, a precision photometer of extreme accuracy and stability, with liquid density and reflection head accessories for use with solutions or solids, has a wide scope of applications. Macbeth instruments are marketed by the Macbeth Instrument Corporation, a subsidiary of the Macbeth Corporation.

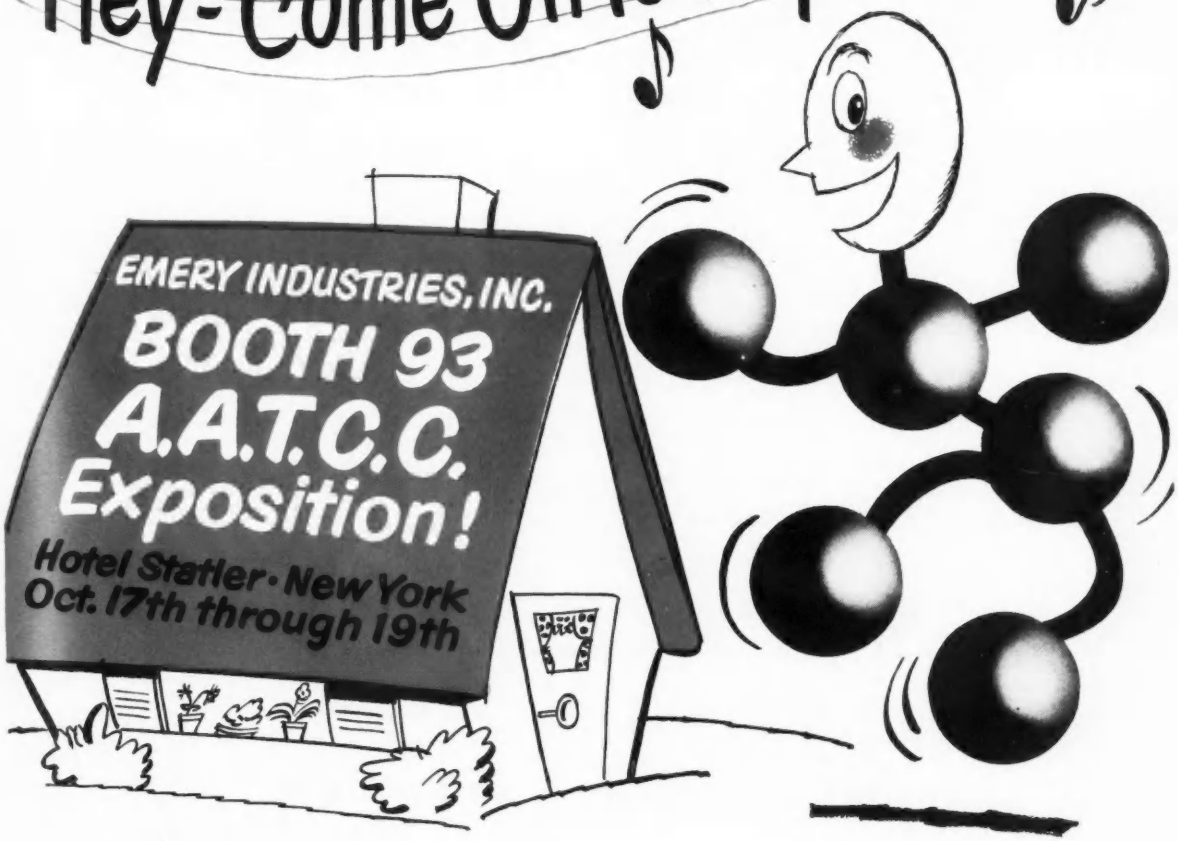
*We invite you to write for literature on Macbeth products.*

**Macbeth Daylighting Corporation**

a subsidiary of

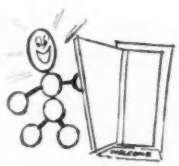
**Macbeth Corporation, Newburgh, N. Y.**

# Hey - Come On To My House



Come on to my house, my house—
I'm gonna make it worth your while,
Show you how to make more money
In the good old Twitchell style.
Woolens, worsteds, rayons, cottons—
There's a Twitchell brand for you!
Get better quality, higher yields
Come on to my house . . . please do!

Come on to my house, my house—
I'm gonna give you a peek
At things not yet unveiled
That you must surely seek.
Development will give you clues
To products which you'll say
Are just what you've been looking for
So, come on to my house, eh!



Come on to my house, my house—
And see my collection of oils
To make you lucky with cards
And reduce your number of noils,
For coning, soaking, rewetting—
To help you twist and spin!
The only request we make . . .
Come on to my house, walk right in!

Come on to my house, my house—
It's old and tried and true,
The scene of many triumphs
In making things brand new.
But better by far than tradition
Is the loyalty of friends like you.
So here's our sincere invitation.
Come on to my house, please do!

**Emery** *Twitchell Textile Oils*

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# Killing STATIC is not enough

If you can't say **"YES"** to these questions, your present anti-static agent is doing only half its job.

★ Does it spread evenly and thoroughly, covering all capillary surfaces of fibers or filaments?

★ Does it establish a uniform coefficient of friction, imparting equallized fiber-to-fiber cohesion?

★ Does it insure absence of gumminess involving aprons and card clothing?

★ Does it give you freedom from yellowing? Rancidity? Corrosive effects on mechanical parts?

★ Does it scour out readily and completely?

★ Is it balanced to do your job?

*You can expect these "extras" and others, when you use Nopco "balanced" anti-static chemicals.*

Reg. U. S. Pat. Off.

Nopco's "balanced" anti-static chemicals will be featured at the forthcoming Exhibit of the American Association of Textile Chemists and Colorists at the Hotel Statler in New York, October 17-19. You are cordially invited to visit Nopco booths 4 and 5 in the Georgian Room during your stay.

**NOPCO * "Balanced" Anti-Static Chemicals**

**NOPCO 1656-R**— *A moisture-free worsted oil applicable to all worsted production systems.*

**NOPCO 1056-A**— *A vital processing aid for Nylon warp and filling yarns.*

**NOPCO FUA**— *Widely used wool lubricant. Performs like a soap in wet finishing.*

**NOPCO 1125-P**— *For Nylon and Orlon yarns for lace manufacture. Prevents graphite contamination.*

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since 1931 in

MATERIALS AND PROCESSES FOR THE MANUFACTURE, DYEING AND FINISHING OF SILK, RAYONS, SYNTHETICS AND FINE COTTONS

## SOLUOL CHEMICAL CO., INC.

*Manufacturing Chemists*

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*SPECIALIZED TECHNICAL SERVICE*

See us at the Show —
Booths 14 and 15

# Colors Come Alive with *Evenate

Acetate fabrics or nylon-acetate combinations, like the beautiful sport dress shown here, get added beauty and saleability with Evenate in the dyebath. Colors come alive, patterns develop amazing sharpness of detail, brilliance.

Evenate is outstanding for extremely level dyeing results. It assures better dye penetration, shorter dyeing time. Non-foaming in dyebath. Works equally well with acid colors and acetate dyes.

Evenate can be used on underwear fabrics and carpet yarns, too. Try it on knit goods, woven nylon, laces. Write or call your Amalgamated Representative for production samples today.

**Evenate is a thin paste readily soluble in the dyebath. It is a non-ionic condensate combined with a glyceride.*

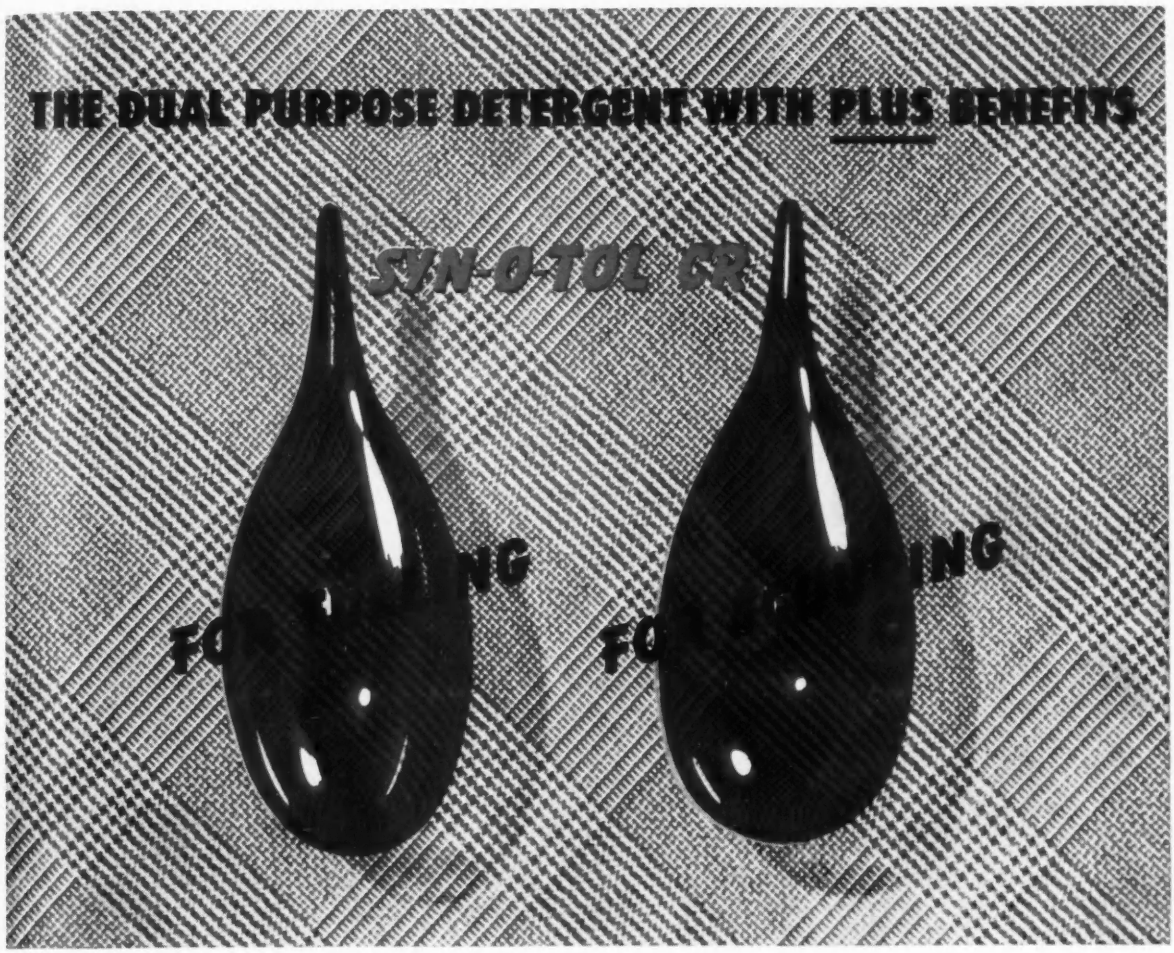
AMALGAMATED CHEMICAL CORP., Phila. 34, Pa.
Southern Division: 1819 Spring Garden Street, Greensboro, N. C.

# Amalgamated

Excellent penetration and level dyeing results are obtained on new synthetic carpet yarns with Evenate.

With Evenate, nylon-acetate combinations used in lingerie lace, achieve a perfect union of shade.

Hosiery dyehouses report increased production because of fewer redyes with Evenate.




SYN-O-TOL CR is not only highly efficient as a scouring agent, it is equally effective in the fulling operation. When used in fulling, SYN-O-TOL CR substantially reduces soap usage, produces cleaner goods, and assures level dyeing. Here are its advantages:

***For Fulling Woolen and Worsted Piece Goods***

- Activates soap so efficiently that less soap is required to give same cover etc., on finished goods.
- Increase rinsibility of soap, etc.
- Provides a better ground for level dyeing because the fabric contains no residual soap.
- Instantly and evenly wets cotton warp fabrics etc., in the fulling mill.

***For Scouring Wools and Man-made Fibers***

- Has excellent suspending and "staying" power.
- Produces a viscous soapy stock at about 20% concentration.
- Provides greater detergent power than alkali-soap combinations.
- Won't leave goods harsh, etc. It is kind to fibers.
- Highly effective for removing sizing materials, gelatine, oils, dirt, etc., from all types of fabric.

**SYN-O-TOL CR IS MORE ECONOMICAL THAN SOAP WHEN USED WITH ALKALI**

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**E. F. DREW & CO., Inc.**

**15 EAST 26th STREET, NEW YORK 10, N.Y.**

**DREW PRODUCTS**

# "Proper Processing sets the mood for fashion!"

says **Adele Simpson**
noted American designer

**"To me a lovely fabric** is a challenge to create styles that will do the material justice," says Miss Simpson. "PROPERLY PROCESSED materials are so fine in texture, so rich in coloring that they often set the mood for good creative design!"

**Top designers like Miss Simpson** know the importance of PROPER PROCESSING. Reason enough for the choice of Colgate-Palmolive-Peet wetting, scouring, fulling and dispersing agents by so many American mills, converters, finishers and dyers.

**Whatever your fabric,** whatever your processing problem, there's a C.P.P. soap or synthetic detergent suited to your needs. Ask your local Colgate-Palmolive-Peet representative for details . . . or, write today to

**INDUSTRIAL DEPARTMENT, COLGATE-PALMOLIVE-PEET CO.**
**Jersey City 2, N. J.**

*This 2-piece suit by Adele Simpson is made of Teardrop Cotton Chiffon. It features a lined fitted jacket, slim skirt, short sleeves and paper-weight buttons. Comes in beige, mauve and blue.*

**COLGATE FORMULA 25**
For low-temperature washing ordinarily requiring olive oil soaps. Sold in eastern states only.

**COLGATE WHITE SOAP FLAKES**
High-grade thin white flakes. Not milled or polished. 90% anhydrous soap.

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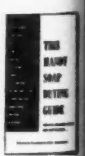
Made from pure tallow, guaranteed to contain 88% or more soap. Titer approx. 42°C.

**ARCTIC SYNTEX A AND T**
Synthetic detergents and wetting agents. Unsurpassed for many processing operations.

**MENTOR BEADS**
An alkyl aryl sulfonate detergent . . . of high purity . . . stable in acid and alkali . . . outstanding detergent and wetting properties. Sold in eastern states only.

**FREE!** *New 1951 Handy Soap Buying Guide. Tells you the right soap for every purpose! See your C.P.P. representative, or write to our Industrial Department.*



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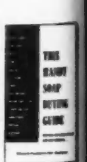

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Another GDC achievement

# MARHEN PROCESS

# for controlled vat dyeing

**This process provides an electronic control for the reduction potentials which govern the dyeing efficiency of the vat dyebath. The benefits are obvious:**

- Eliminates improper balance of chemical assistants
- Prevents over-reduction of sensitive vat dyes
- Yields batch to batch uniformity
- Obviates the need for titration and test paper controls
- Substantial economies in the consumption of chemicals (Trial mill runs indicate savings up to 50%)
- Low cost of apparatus
- Process can be run by regular mill help

**The Marhen Process was developed thru the joint efforts of the Technical personnel of the General Dyestuff Corporation and General Aniline and Film Corporation.**

**The Marhen Process is another GDC contribution to greater technical efficiency in the field of wet processing.**

**For information on this latest innovation in vat dyeing address our nearest office.**


**GENERAL DYESTUFF CORPORATION**

**435 HUDSON STREET • NEW YORK 14, NEW YORK**

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# KNIT GOODS BLEACHING

## These installations now producing over 60,000 pounds per day!

**POTTSVILLE**
**Bleaching and Dyeing Co.**
**Port Carbon, Pa.**

Installed.....July, 1948
Capacity.....3,000 lbs./hr.
Goods Processed.....Cotton ribbed knit material and flat knit of all sizes and weights

**Processing time cut to less than 2 hours . . . Substantial savings in steam, water, and chemicals.**

**SPRING CITY**
**Bleach and Dye Works**
**Spring City, Pa.**

Installed.....July, 1947
Capacity.....3,000 lbs./per hr.
Goods Processed.....Cotton knit

**Bleaching time reduced 90% on light- and medium-weight fabrics . . . All operations easily handled by two men.**

**LUMBERTON**
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**Lumberton, N. C.**

Installed.....March, 1948
Capacity.....2,500 lbs./per hr.
Goods Processed.....Cotton knit underwear fabrics

**Results satisfactory in every respect . . . Millions of yards processed speedily and economically since installation.**

**OUTSTANDING RESULTS LIKE THESE** are being duplicated everywhere the Du Pont Continuous Peroxide Bleaching System is used. Why not check its excellent possibilities for your plant right now?

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on Du Pont Continuous Peroxide Bleaching Systems, just write: E. I. du Pont de Nemours & Co. (Inc.), Electrochemicals Dept., Wilmington, Del.

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*Electrochemicals Department*, Wilmington 98, Del.
Please send me your Bulletin—P 35-1148—"Bleaching Cotton Knit Goods in the Du Pont Continuous Bleaching Range".

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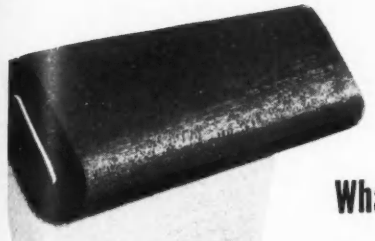

Whatever your wet-processing need—

**DYE—BLEACH—**

**FINISH—**

**NATURAL or**

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**FIBERS—FABRICS—**

you'll meet it

more efficiently with

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. . . more economically and more profitably, too. Since 1909, market-wise textile mills have found Laurel laboratory- and mill-tested processing specialties give speedier production, better finish — more salable fabrics. We invite you to see for yourself how these dependable Laurel products make your processing dollars go farther. Let us arrange a practical demonstration in your plant. Write or call us today.

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# REPCOLENE -545

an all-purpose efficient wetting, dispersing and leveling agent

When dyeing Naphthols, REPCOLENE-545 aids in penetration, level dyeing and reduces crocking.

With sulphur colors, REPCOLENE-545 produces brighter, bloomier shades and reduces tendency of crocking.

On wool, REPCOLENE-545 produces good tone and penetration, particularly on hat bodies and felts.

REPCOLENE-545 is an excellent stripping assistant for vat dyes.

• Complete information sheets are available.

## REFINED PRODUCTS CORPORATION

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*New England Representatives:* E. L. LEGG, 8 Harding Ave., Providence, R. I. / DONALD R. MacLEAN, Box 202, So. Dartmouth, Mass.

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# REFINED PRODUCTS are CHEMICAL MANUFACTURERS*

## OF THE FOLLOWING COMPLETE LINE OF TEXTILE SPECIALTIES

*Developed by Research* *Proved by Performance*

### PERMA-PAR ACA-100

This new product imparts a soft, mellow hand to the fabric and has a minimum effect on the shade and light fastness of direct colors. Since it is of an alkaline nature, it can be used as a gas fading inhibitor for acetate colors.

### REPCOLENE K-50-100%

REPCOLENE K-50-100% is a cocoanut oil fatty acid amine condensate. REPCOLENE K-50-100% finds wide application in the wet processing of textiles as a penetrating, scouring, leveling, dispersing and finishing agent and it can be used to replace 50% of soap in all operations.

### PERMA-SETS

PERMA SET A—used where a firm hand is desired.

PERMA SET B—used to secure a full, soft hand.

PERMA SET A can be used in place of starch to give a permanent firm finish.

PERMA SET B can be used as above with PERMA SET A in all applications where a softener and more flexible hand is desired.

PERMA SET B makes an excellent snag resistant finish for nylon, rayon and silk hosiery.

PERMA SET H—A resin emulsion for use in hosiery finishing. It reduces snags due to handling and has the added advantage of providing at the same time, a means for delustering hosiery.

• ***Other special resin emulsions for specific purposes.***

### PERMA-TERGE

A highly efficient detergent for all types of spun rayons, rayon sheers, rayon crepes, pigments and bright yarns, crepes, taffetas, nylons, acetate and acetate blends.

### PERMA-KLEER-40

Used in peroxide bleaching. PERMA KLEER-40 has a stabilizing effect on the bath since it sequesters iron and other trace metals which catalyze the rapid release of oxygen. Used in the dye bath, PERMA KLEER-40 eliminates faulty dyeings caused by the presence of traces of iron, copper, calcium, magnesium and aluminum.

### TERGEL-T

TERGEL T is a highly efficient detergent for use on all types of spun rayons, rayon sheers, rayon crepes, pigments and bright yarn, crepes, taffetas, nylon, wool, spun rayon mixtures, acetate and acetate blends. It has excellent wettin gaction and a retarding action on dyestuffs, which promotes uniformity and levelness in dyeing operations.

**** All products Reg. U. S. Pat. Off.***

### PERMA-PAR R

An improved cation active finish for all types of fabrics. It is odorless and when used in the last rinse it imparts a soft, spongy, mellow hand. It is resistant to washing and dry cleaning.

### PERMA-PAR RG

This type cation finish plus the features of above, gives a very soft slick, weighty drape and a built-up hand.

### PERMA-PAR K

A two-purpose boil-off compound and softener which serves as a prefinish. It increases dye solubility and color value. Especially recommended for print goods and as a dyeing agent for hosiery.

### VELVAMINE K-90

This improved product imparts an odorless finish which is resistant to washing and dry cleaning. A finishing and softening agent for all fabrics. Ideal when used in conjunction with starches, resins, dullers and other finishes where colloidal suspension is desired and acts as a plasticizer to such finishes on the cloth.

### PERMALENE-SOL

A penetrant and cleaner developed for use on all fabrics, especially tightly woven and high twist materials. Excellent for removing loom grease and graphite. Recommended for pad dyeing where it assures thorough uniform penetration. It is non-foaming at high speeds.

### VELVAMINE GF

A blend of amines and softeners designed to protect acetate colors from gas or fumes fading. It resists removal by dry-cleaning and when used on mixed fabrics, has a minimum effect on the shade and light fastness of the direct colors. Velvamine GF produces a soft, full hand and does not affect the appearance of the treated fabrics.

**General information sheets on all products are available and we suggest that you write for a complete set for your files.**

### REPCOLENE

A multi-purpose synthetic auxiliary. A neutral blend of fatty acid esters and aromatic sulphonates. It is a clear, free flowing, non-jelling liquid, an effective wetting and scouring agent which also acts as an excellent dye assistant and levelling agent. Extremely stable, its acidity is not affected by acids, alkalies, lime, or the salts usually found in hard water.

### PERMA-CIDE

An outstanding mildew-proofing compound. Comprehensive, comparative tests, made by an independent testing laboratory, show this product to be highly fungistatic, bacteriostatic, bactericidal and fungicidal. The compound is non-toxic, non-irritating and is not a cutaneous sensitizer. All these properties are retained up to 30 washings.

### PERMA-FIX

A compound which fixes direct colors on cotton and rayons. Its use greatly reduces the bleeding and crocking of direct colors. Also useful in place of fixing salts.

### PERMALENE P-11-X

An excellent assistant in package dyeing of yarns, especially recommended when dyeing vat dyes. It gives good penetration and dispersion and minimizes the amount of foaming during dyeing operations.

### PERMALENE-16

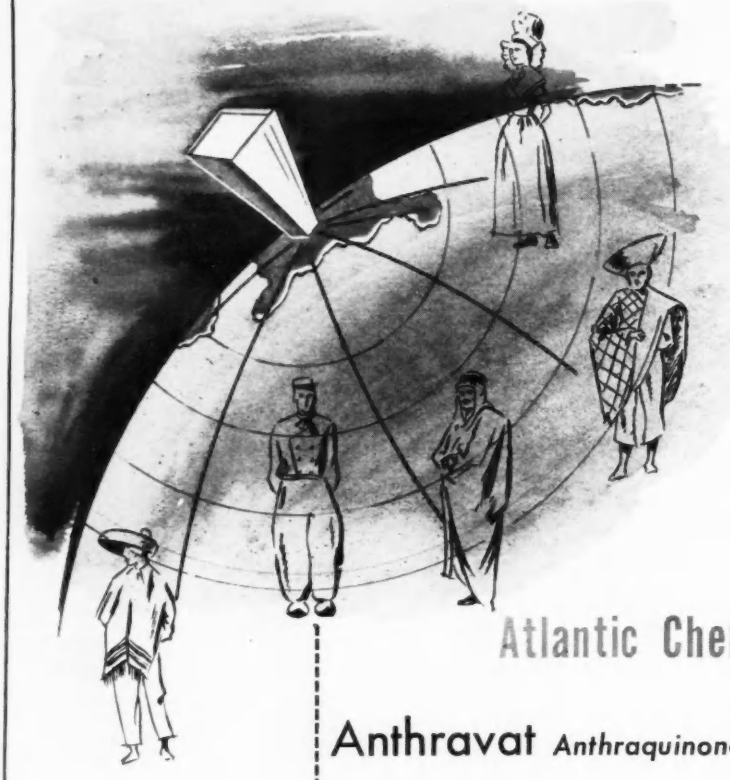
This product is an efficient retarding and dispersing agent for vat dyeing in piece goods, package, beam and raw stock.

### REPCOL A-100

Being non-ionic in nature, it is stable in acid, neutral, and alkaline solution and resistant to calcium and magnesium salts usually found in hard water.

### REPCOLENE-545

For dyeing Naphthols, the addition of REPCOLENE-545 to the bath will aid in the penetration and level dyeing and it reduces the tendency of crocking.



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Atlantic Chemical Corporation

Anthravat *Anthraquinone vat dyes*

Thiovat, Thioprint *Thioindigoid vat dyes*

Printing *Stabilized azoics*

Atlantic Superfast *Direct dyes*

Atlantic Direct *Direct dyes*

**The greatest names in textiles insist on Atlantic *quality-controlled* dyestuffs**

Atlantic DYESTUFFS

**Atlantic Chemical Corporation**

*MANUFACTURERS OF COAL-TAR INTERMEDIATES AND DYESTUFFS*

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Works and Laboratories: 10 Kingsland Road, Nutley, New Jersey

CABLE ADDRESS. "ANILDYE—PASSAIC"

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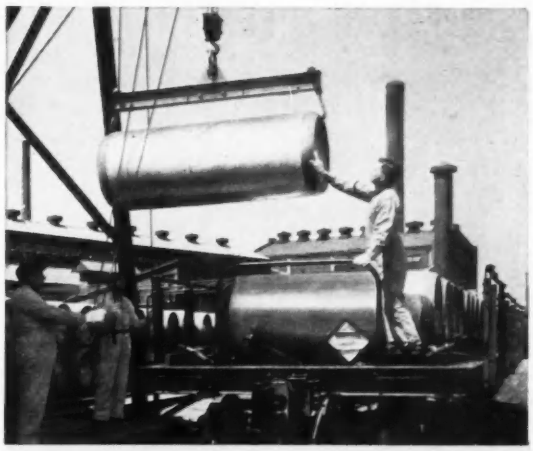
*basic for:* SYNTHETIC FIBERS
TEXTILE PROCESSING
DYESTUFF MANUFACTURE



LIQUID CHLORINE in one-ton containers—one of several convenient packages in which Hooker ships this high-purity bleaching agent.

Directly or indirectly, the textile industry depends upon Hooker for uniform high quality chemicals.

**Viscose Rayon,** for example, employs Hooker Chemicals all the way from the manufacture of dissolving pulp (chlorine and caustic soda) to the final production of fibers (caustic soda, lauryl pyridinium chloride, sodium sulfide, sodium sulfhydrate).

**Textile Processing** uses Hooker Caustic Soda for kier boiling, mercerizing, in sodium hypochlorite bleach, and as a dyebath assistant. Hooker Chlorinated Paraffin is used in formulations that make canvas water-repellent and fire-retardant.

**Dyestuffs** . . . Although we do not manufacture dyes, we provide over 30 dyestuff intermediates that go into the making of the finished textile product. The most important of these are listed at the right.

**Special Products** . . . We are interested in working with dyestuff and specialty manufacturers to develop new intermediates for use in dyes, mothproofing compounds, flame retardants, and similar products. In addition to the products we regularly supply, we have provided many new and special chemicals, on pilot plant or commercial scale. Your inquiry is invited.

**FOR UP-TO-DATE DELIVERY INFORMATION . . .** please keep in touch with your Hooker sales representative. He will keep you informed of any changes in the delivery situation, and will notify you promptly as materials become available.

**For Rayon Manufacture and Processing**

| | |
|---|---|
| Caustic Soda | Lauryl Pyridinium Chloride |
| Sodium Sulfhydrate | Sodium Sulfide |

**For Textile Processing**

| | |
|---|---|
| Benzoic Acid | Muriatic Acid |
| Caustic Soda | Sodium Sulfhydrate |
| Chlorine | Sodium Sulfide |
| Chlorinated Paraffin | |

**For Dyestuff Manufacture**

| | |
|---|---|
| Aluminum Chloride | Monochloroacetic Acid |
| Benzoyl Chloride | m-Nitrobenzoyl Chloride |
| Benzyl Chloride | p-Nitrobenzoyl Chloride |
| Caustic Soda | Phenyl Isocyanate |
| Chlorine | Sodium Sulfhydrate |
| Chlorobenzenes | Sodium Sulfide |

• • •

For the complete list of Hooker Chemicals, send for Bulletin 100. For properties, specifications and typical uses of any chemicals listed here, ask for Technical Data Sheets. Please request them on your business letterhead.

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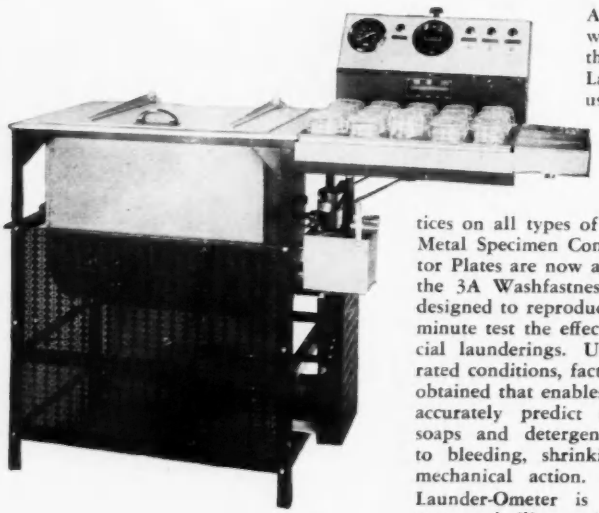
# ATLAS-OMETERS

*for more than 25 years the textile industry's standard machines for testing*

- ★ color fastness
- ★ shrinkage
- ★ detergency
- ★ bleeding
- ★ resistance to mechanical action, etc.

## ATLAS LAUNDER-OMETERS



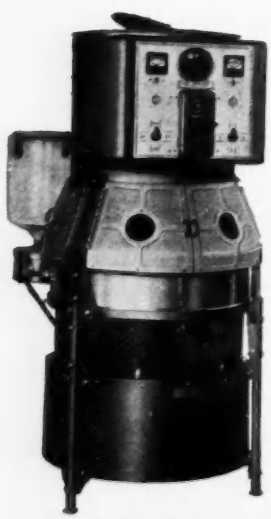
As the standard washing machine of the A.A.T.C.C., the Launder-Ometer is used to reproduce quickly the destructive effects of commercial laundering practices on all types of fabrics. The New Metal Specimen Containers and Adaptor Plates are now available for use in the 3A Washfastness Test which was designed to reproduce in one forty-five minute test the effects of five commercial launderings. Under these accelerated conditions, factual information is obtained that enables manufacturers to accurately predict color fastness to soaps and detergents, and resistance to bleeding, shrinking, washing and mechanical action. In addition, the Launder-Ometer is used for dyeing tests at boiling point.

Precision controls in the Launder-Ometer permit careful regulation of all factors, and identical reproduction of tests whenever desired. With its big capacity, the machine permits as many as 20 tests to be run simultaneously. The Atlas Pre-heating Loading Table—standard equipment on Launder-Ometers—makes it possible to start all tests at the same temperature, for greater accuracy. Mechanical action is provided by the introduction of stainless steel spheres or rubber balls into each container.

Located behind the Pre-heating Table, at the most convenient height is the modern control cabinet housing all switches, pilot lights, indicating and control instruments, and direct-reading dial type thermometer. Launder-Ometers are available for use with electricity, steam gas, or both electricity and steam for heating the water bath.

In the Launder-Ometer, all sheet metal parts coming into direct contact with water, including the test chamber and cover, and pre-heating loading table are constructed of stainless steel for permanent resistance to corrosion.

## ATLAS FADE-OMETER



The Fade-Ometer brings under laboratory control the deteriorating action of sunlight on any material or type of finish. Used primarily to measure the light fastness of colors, the Fade-Ometer is also used to determine other photochemical changes caused by exposure to sunlight.

In making tests, samples in masked holders are rotated around an Atlas Carbon Arc—the closest approach to natural sunlight—at a fixed distance from the arc and at a constant speed in order to assure equal distribution of light to each sample. Upper and lower suspension rings keep samples in proper vertical alignment. Color fastness is measured in terms of Standard Fading Hours, using new calibration paper.

Operation of the Fade-Ometer is fully automatic. The simple, but complete control panel includes voltmeter, ammeter, running time meter, time switch, thermo-regulator, pilot lights and switches, which serve to keep all variable factors — time, temperature, humidity, and light — under accurate control.

The Fade-Ometer may safely be left in continuous operation overnight. It is furnished with water pan and test chamber constructed of 18-8 stainless steel and with a wide variety of sample holders and exposure masks.

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by

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- Fast Color Bases
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- Spectrolenes
- Acid Dyes
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Quality and integrity . . . the maximum of each goes into every pound of AHCOVAT DYES. The natural result: vat dye performance you can always depend upon!

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For printing and dyeing on dress goods, draperies and upholstery fabrics, this AHCOVAT dye gives extremely high light fastness and brightness of shades.

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For improving fastness to washing and crocking of direct colors.

**MOYTOL**

Penetrant for dyeing, fulling, carbonizing, mercerizing, finishing and sizing. Effective in acid, alkaline and salt solutions.

**STANTEX* OILS FOR YARNS AND STAPLE**

Suitable for all fibers in coning, winding, twisting, spinning, weaving, knitting, etc. Characterized by high lubricity, excellent stability and scourability and good anti-static properties.

**RETARDINE***

For level dyeing and stripping of vat sulfur and direct colors.

**STANTEX* PENETRATORS**

For fast, efficient wetting and surface reducing action in dyeing and finishing of all yarns and fabrics.

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Durable and semi-durable finishes imparting a full range of body, hand and drape to all fabrics; non-slip finishes; snag resistant finish for hosiery; ribbon finish.

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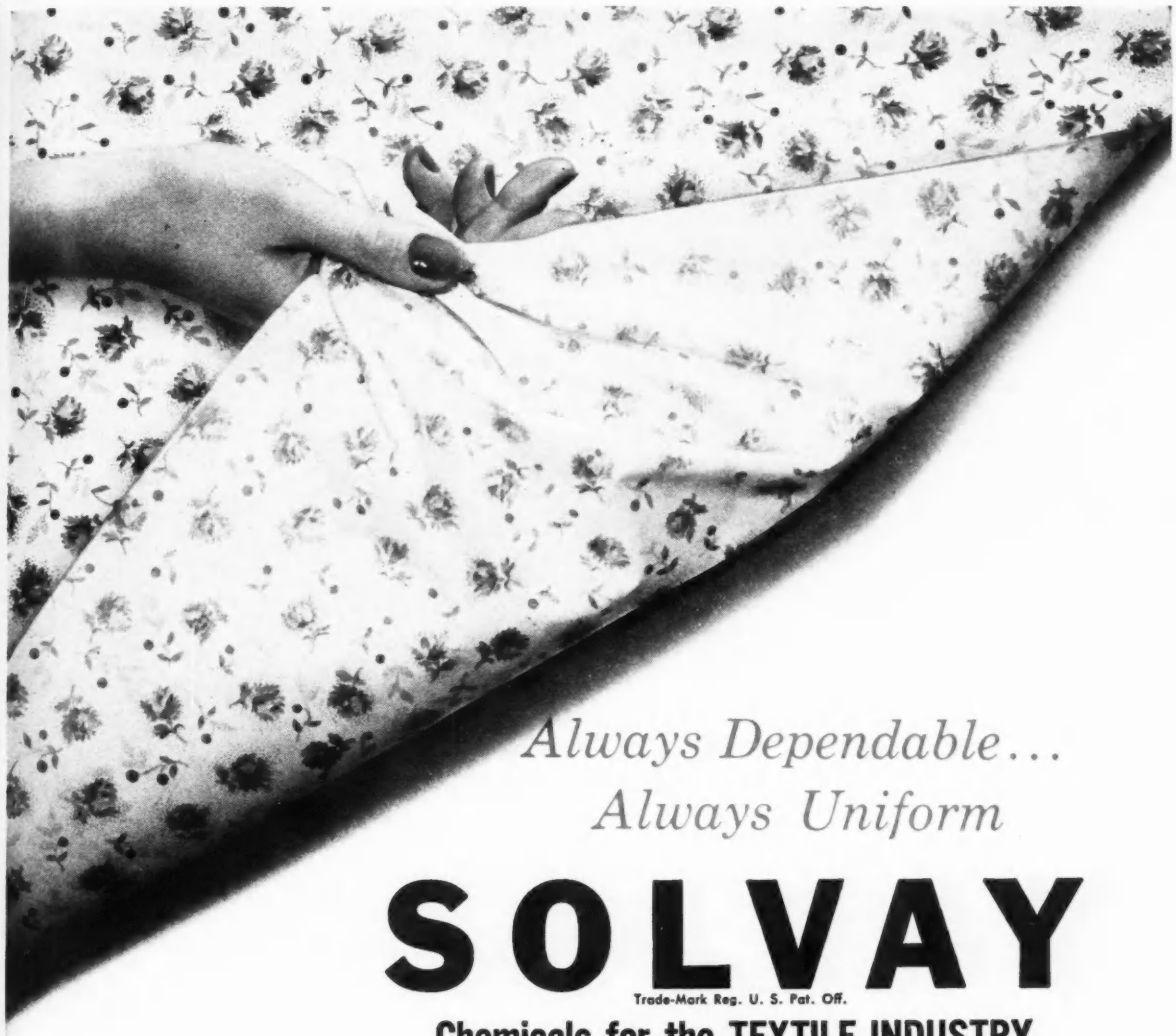
An auxiliary of Protean nature, used as a protective agent for the wool fibre in Indigo dyeing; 10% tensility increased and a loftier handle is imparted to the wool. A product you cannot afford not to use.



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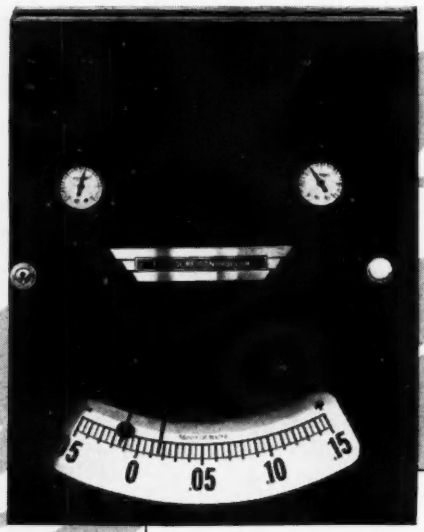


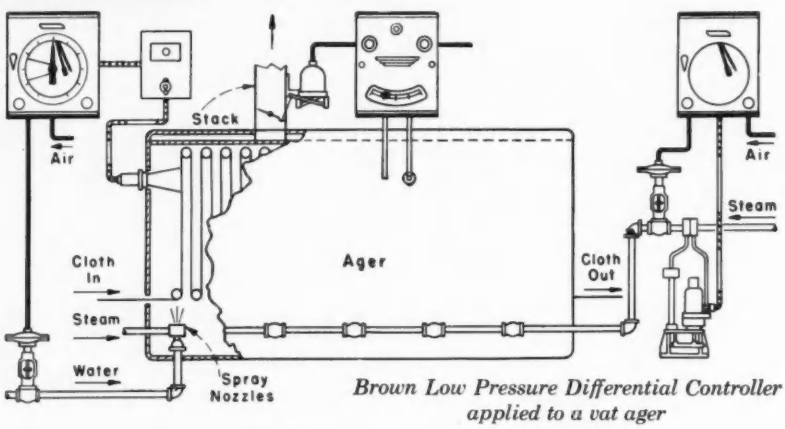


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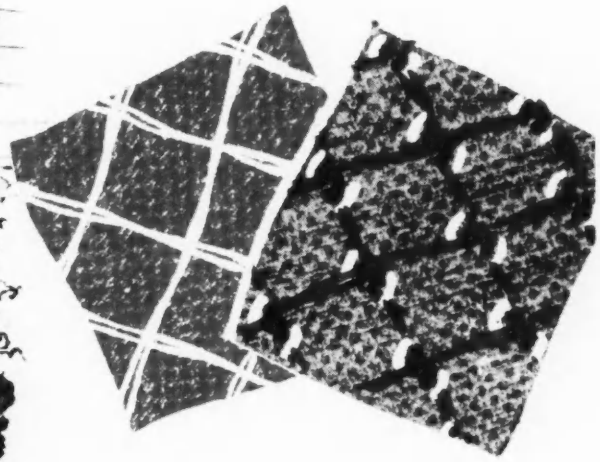

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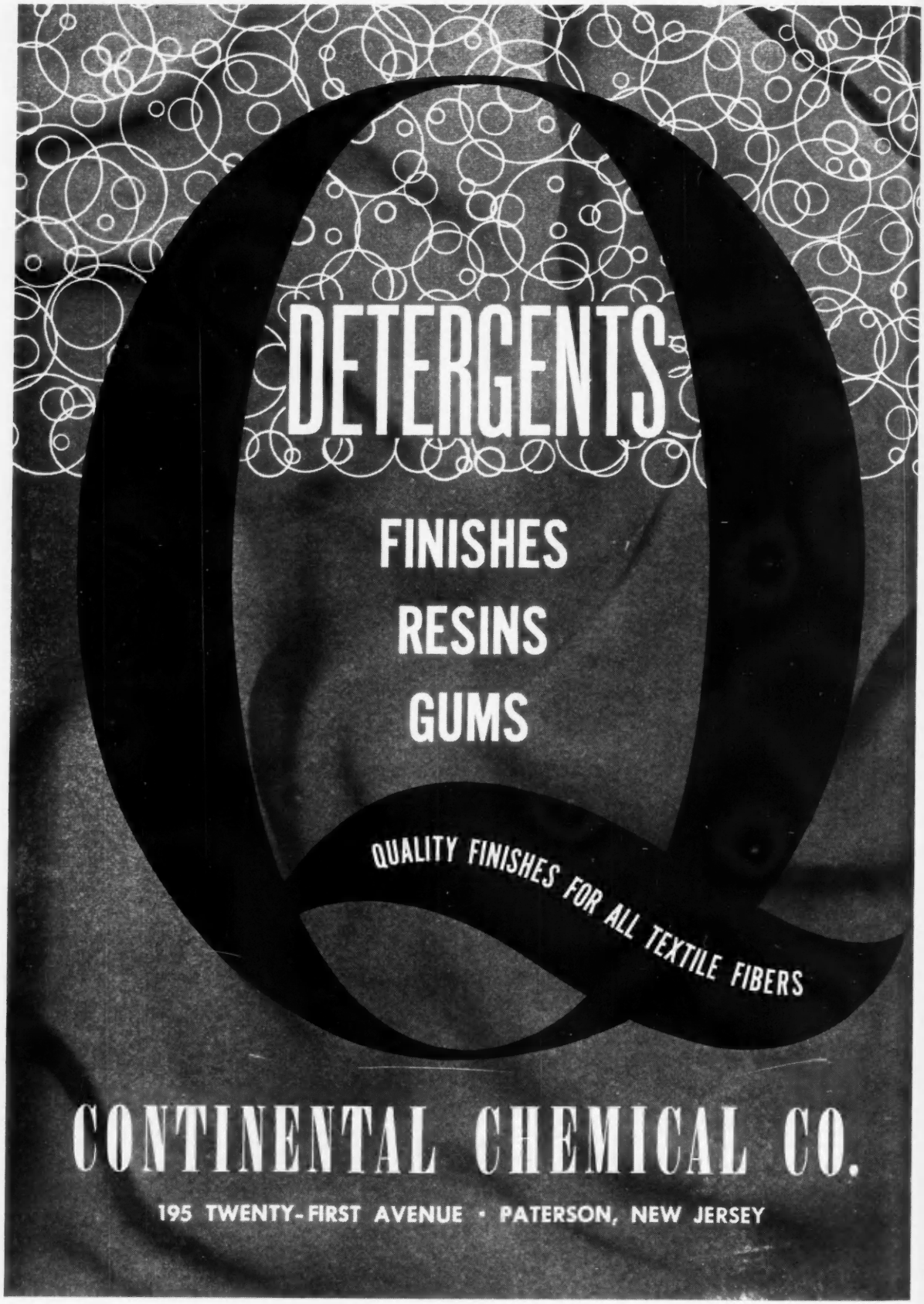
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*In raw wool scouring*, less soap gives you whiter, loftier stock. *In kier boiling of cotton*, you get a whiter, clearer bottom for bleaching or dyeing. *In sizing* you get a tougher, more flexible film on the yarn. *In dyeing*, you prevent staining and consequent dulling of colors because QUADRAFOS sequesters iron, copper and nickel ions picked up from equipment, goods or present in the water supply. And so on, through at least 27 vital processing operations, QUADRAFOS gives quality a lift.

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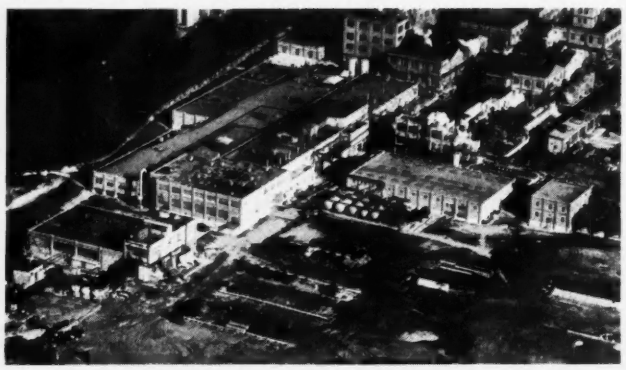

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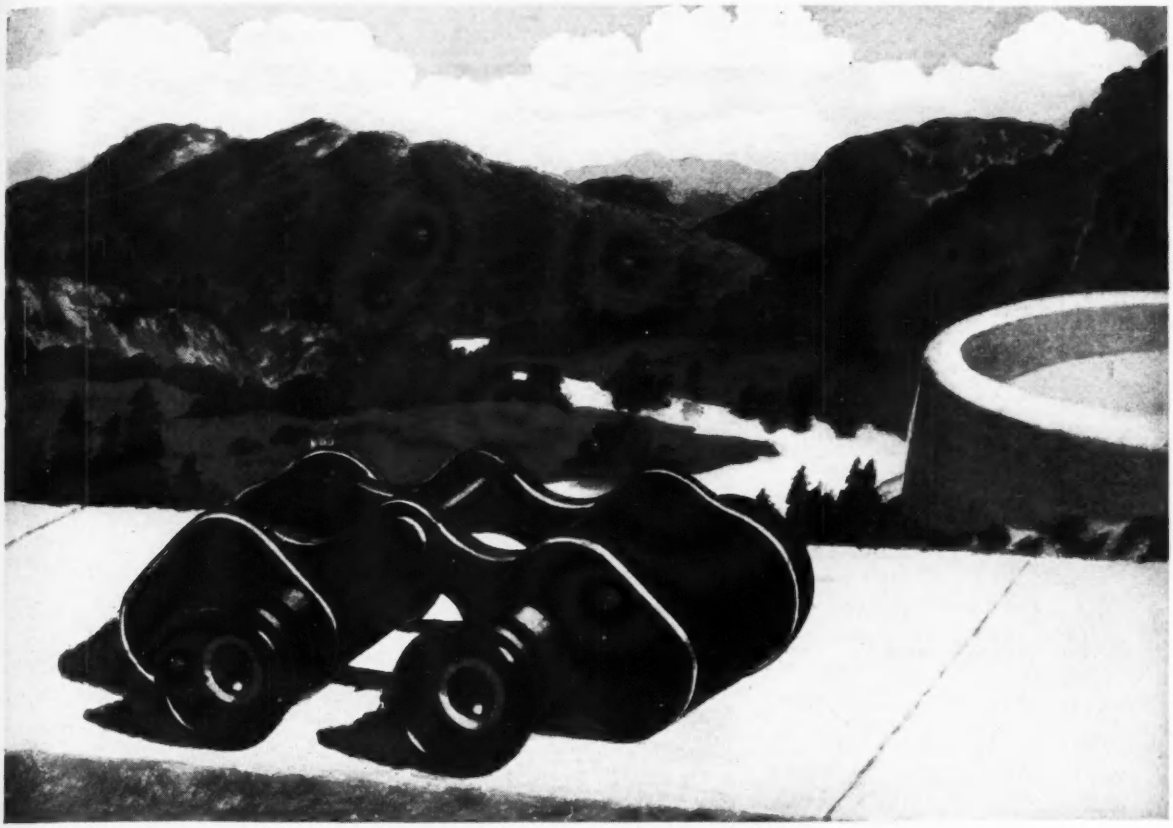

# When you need a wider range

Lift a pair of binoculars to your eyes . . . and details of the landscape in the distance come clearly into view.

Your range of vision is immeasurably widened by the powerful lenses.

Your working range in finishing operations is also greatly widened when you use the *all-purpose* Diastafor de-sizing agent. Bleachers and dyers prefer Diastafor, because it works so well in an unusually wide range of temperatures and pH.

Diastafor's working range meets every enzyme de-sizing requirement. Its remarkable flexibility of use has made it the favorite in its field for more than 40 years.

You will find Diastafor works so easily, so quickly, so economically! It *protects* your operations, gives you good results under widely varying conditions – helps you to overcome the difficulties that arise with various lots. Diastafor gives you miles of safe, easy operation . . . works equally well with cottons, rayons, mixed goods. It is increasingly popular for use in the continuous process.

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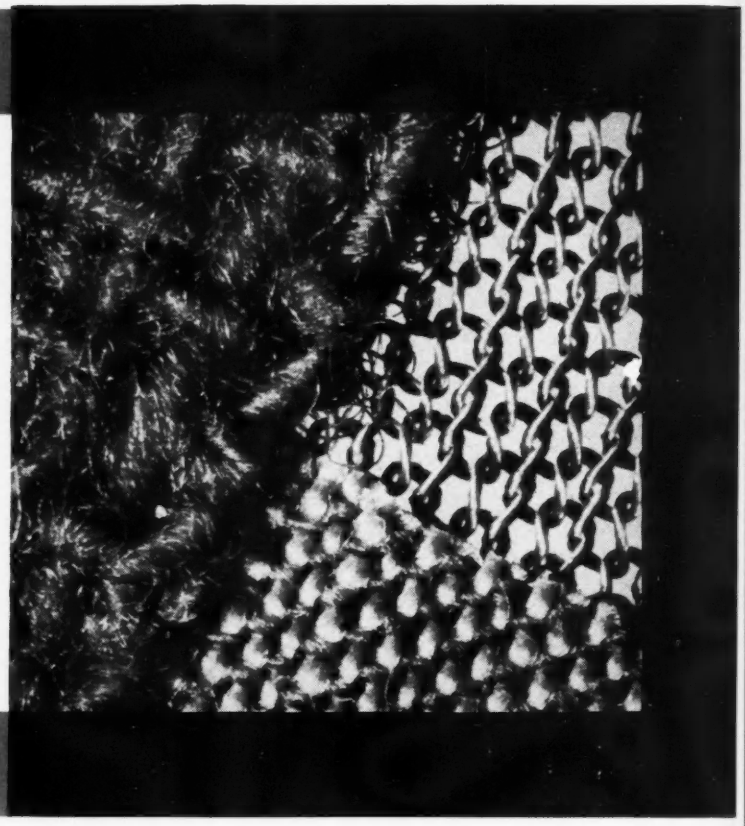

ULTRAWET 60L—an organic alkyl aryl sulfonate, 60% solids and 40% water—is tops in detergency, wetting and emulsifying properties with excellent rinsability and freedom from inorganic salts. It's especially effective in three textile operations:

**Dyeing.** ULTRAWET 60L has excellent leveling and penetrating action. It is unusually effective in the direct dyeing of cottons and viscose rayons, acid dyeing of wool, and aids the levelness of acetate rayon dyeing.

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Official Publication of the Proceedings of the American Association of Textile Chemists and Colorists.

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**OCTOBER 1, 1951**
**VOLUME 40 NUMBER 20**

## *Contents*

**Contents of previous issues can be found by consulting the Industrial Arts Index and the Engineering Index, Inc. at your library.**

### • Proceedings of the American Association of Textile Chemists and Colorists

Greetings From Your President ..... P613
Past Presidents ..... P614
National Officers ..... P615
Greetings From the 30th Annual Convention Co-Chairmen ..... P616
Convention Committees ..... P616
Program ..... P620
Your Host, the New York Section ..... P622
P J Wood
Exhibitors ..... P623
Panel Announced for Symposium Luncheon ..... P635
Former Governor Hoffman to Speak at Annual Banquet ..... P635
Olney Medal to be Awarded to Raymond W Jacoby ..... P636
J Spencer Love to Speak at Mixed Fibers Symposium Luncheon ..... P637
Intersectional Contest Committees ..... P638
Abstracts of Technical Papers ..... P641
The Wet Processing Industry in the New York Area P645
P J Wood
Philadelphia Section:—
Synthetic Yarn Preparation ..... P649
David Cook
Machinery for Finishing Woven Fabrics Made of Synthetic Fibers ..... P653
Joseph W Tucker
List of Textile Chemical Specialties for "1952 Technical Manual and Yearbook" ..... P658
NNE Officers and Committee Chairmen Meet.... P658
Dr Weidmann to Speak at Oct 26 NNE Meeting ... P658
Calendar of Future Meetings..... P658
Experiments with a Small Rotary Core-Sampling Tube for Raw Wool ..... P659
George C LeCompte, Henry R Keller and Stanley P Davis
Student Award Committee Names 1951 Winners .. P660
Employment Register ..... P660

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**OUR PRECISION CONTROL** in the manufacture of dyestuffs, resulting from more advanced methods — including special electronic equipment — is the thing which makes it possible for us to give you a superior product. Down through the years, the industry has agreed: "It's Althouse, for color uniformity and fastness."

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ALTHOUSE
*Chemical Company, Inc.*
READING, PENNSYLVANIA

**pace-setter in precision dye-making**

*Proceedings of the*
# American Association of Textile Chemists and Colorists
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OCTOBER 1, 1951

# NATIONAL CONVENTION • NEW YORK • OCTOBER 17-19

## *Greetings*
## FROM YOUR PRESIDENT

**C NORRIS RABOLD**
***President***
The Erwin Mills, Inc

ONCE again it gives me great pleasure, as President of the American Association of Textile Chemists and Colorists to welcome you, my fellow members and visitors, on the eve of the Thirtieth National Convention of this Association. The New York Section, our Host for our National Convention joins me in these greetings.

I wish to congratulate the New York Section upon its originality and planning for this Convention. The Section has a wealth of talent represented on their Committees, and the Convention Co-Chairmen, along with these Committees, have worked hard and earnestly to develop the splendid program and exhibits that make up this Meeting. We have gradually developed, in the past several years, a policy for streamlining our Conventions so that more matters of technical interest can be presented. There is no question that the Thirtieth National Convention is a big step forward in this direction.

We are trying here a number of "Firsts", all of which have been made possible by the diligent work of the members of the Association, not only in the New York Section, but also in all Sections. For the first time, a Student Technical Session will be held. Here papers will be presented by our Student members from the different Student Chapters. This in itself is a major development in our efforts to have all members, young and old, contribute to our fund of technical knowledge.

As part of the Convention, we are having an industry symposium on a very timely subject, Mixed Fiber Blends, in which the best informed and most advanced leaders in the textile industry will participate. This might well be called a convention within a convention, for the program is of such a nature that it would be worthy in itself, of attendance by members far and wide.

Exhibits this year are outstanding in number and character. Here too, the extent and variety of this section of the Meeting would also be sufficient reason for your presence. Along with the industry symposium and the exhibits will be the technical sessions and Intersectional Contest. One hears, first hand, the results of recent research investigations, new theories and practical processing developments, presented by the ablest scientists and technicians in their respective fields.

I do not believe any member can afford to stay away from such a Meeting. Every textile manufacturer, every chemical and machinery company and every individual in the industry cannot help but benefit from their participation in the affairs of the Association. Nowhere else is it possible to learn so much that is new and helpful than at an Annual Convention and from our Proceedings. Through exchange of knowledge, our industry's advancement is achieved.

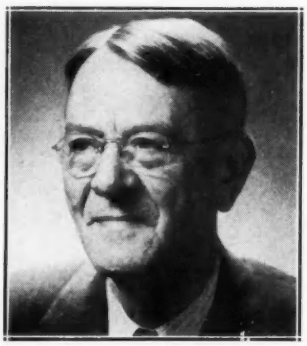
C NORRIS RABOLD, *President*

# PAST PRESIDENTS

(An asterisk follows the names of the deceased)

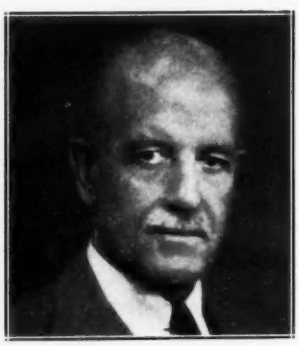
LOUIS A OLNEY* (Founder)
1922-1927

ELVIN H KILLHEFFER
1928-1930



P J WOOD
1931-1932

ROBERT E ROSE*
1933-1935

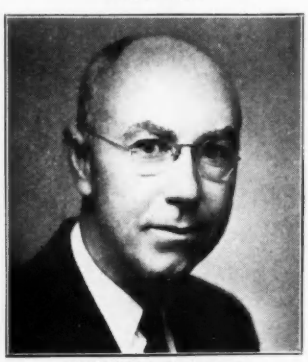


WILLIAM H CADY
1936-1937

ALBAN EAVENSON
1938-1939

CARL Z DRAVES
1940-1941

THOMAS R SMITH
1942-1943

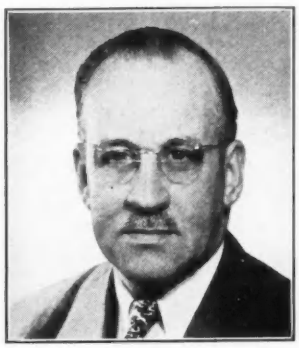


WILLIAM D APPEL
1944-1946

HENRY F HERRMANN
1947-1949

# NATIONAL OFFICERS

**J ROBERT BONNAR**
***Vice-President***
General Dyestuff Corporation



**GEORGE O LINBERG**
***Vice-President***
Belle Chemical Company, Inc

**HAROLD C CHAPIN**
***Secretary***

**WILLIAM R MOORHOUSE**
***Treasurer***
National Aniline Division,
Allied Chemical & Dye Corp

**ALBERT E SAMPSON**
***Assistant Treasurer***
National Aniline Division,
Allied Chemical & Dye Corp

**HAROLD W STIEGLER**
***Director of Research***

**LEONARD S LITTLE**
***Chairman,***
***General Research Committee***
Consultant

**GEORGE H SCHULER**
***Chairman,***
***Publicity Committee***
E I du Pont de Nemours & Co, Inc

**PERCIVAL THEEL**
***Chairman,***
***Publications Committee***
Philadelphia Textile Institute

# GREETINGS
# FROM THE 30th ANNUAL CONVENTION CO-CHAIRMEN

WELCOME to New York City. The New York Section extends greetings to all the members of our Association. We look forward to seeing you at the Hotel Statler, October 17th, 18th and 19th.

Your Convention Committee has planned an excellent technical and recreational program. The Mixed Fibers Luncheon and Symposium is one all will want to attend. The subject is most timely and its presentation in symposium form is the first time this has been done at a National Convention.

For the first time our textile exposition is under the professional management of Campbell-Fairbanks, Inc. The number of exhibitors totals 84, in addition to our own AATCC exhibits. It is our sincere recommendation that the membership of our Association endorse the continued professional management of future exhibits. This naturally means that future Conventions can only be held in cities where ample exhibit facilities and room accommodations are available.

The presentation of the initial American Dyestuff Reporter Award will be made at our annual banquet. Our guest speaker for this event will be the Hon Harold G Hoffman, former Governor of the State of New Jersey.

A most entertaining program has been arranged for our lady members and guests.

The Technical Program is a most comprehensive one pertaining to pertinent subjects of interest to the membership.

The entire profits of the Convention will be allocated to the AATCC General Research Fund.

We extend to you a most hearty welcome to your Convention and the great City of New York.

CHARLES W DORN
PAUL J LUCK

**PAUL J LUCK**
***Cochairman***

**CHARLES W DORN**
***Cochairman***

# CONVENTION COMMITTEES

## *National*

### Convention

KENNETH H BARNARD, *Chairman*
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*American Cyanamid Company*
Charles W Dorn
*J C Penney Co*
Walter F Fancourt III
*W F Fancourt Co*
Samuel L Hayes
*Ciba Company, Inc*
George O Linberg
*Belle Chemical Company, Inc*
George H Wood
*Apponaug Co*
S Jack Davis
*Callaway Mills Co*
Arthur W Etchells
*Hellwig Dyeing Corp*
Herman E Hager
*General Dyestuff Corporation*

**KENNETH H BARNARD**
***Chairman,***
***Convention Committee***

### Technical Program

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*Allied Chemical & Dye Corp*
Kenneth H Barnard
*Textile Resin Dept,*
*American Cyanamid Company*
Herman Boxser
*Acadia Synthetic Products*
Miles A Dahlen
*E I du Pont de Nemours & Co, Inc*
Frederic Dannerth
*Scholler Bros, Inc*

**WILLIAM A HOLST**
***Chairman, Technical Program Committee***

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*Cannon Mills Co*
Raymond W Jacoby
*Ciba Company, Inc*
Alden D Nute
*Textile Resin Dept,*
*American Cyanamid Company*
W George Parks
*University of Rhode Island*
Sumner H Williams
*General Dyestuff Corporation*

### Student Contest

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*E I du Pont de Nemours & Co, Inc*
L W CRAFT, *Secretary*
*E I du Pont de Nemours & Co, Inc*
J Robert Bonnar
*General Dyestuff Corporation*
M M McCann
*Warwick Chemical Co*
Percival Theel
*Philadelphia Textile Institute*

### Intersectional Contest

(See page P638)

**PATRICK J KENNEDY**
***Chairman, Student Contest Committee***

**L W CRAFT**
***Secretary, Student Contest Committee***

**M M McCANN**
***Member, Student Contest Committee***

## *New York Section*

### Cochairmen

CHARLES W DORN
*J C Penney Co*
PAUL J LUCK
*Calco Chemical Division,*
*American Cyanamid Company*

### Exhibits

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*Interchemical Corp*
C W Bendigo
*American Cyanamid Company*
Julius B Goldberg
*J P Stevens & Co, Inc*
Otto C Haufe
*Turner Halsey Co*
Thomas F O'Brien
*R W Bates Piece Dye Works*
Myron D Reeser
*American Dyestuff Reporter*
Francis S Richardson
*Waldrich Co*
Albert J Royce, Sr
*Royce Chemical Co*

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*General Dyestuff Corp*
Leon P Brick
*Onyx Oil & Chemical Co*
George A Jonic
*Calco Chemical Division,*
*American Cyanamid Company*
Richard P Monsaert
*Puritan Piece Dye Works*

### Banquet

WELDON G HELMUS, *Chairman*
*Fair Lawn Finishing Co*
Adolph Born
*Forstmann Woolen Co*
Sidney M Conn
*E I du Pont de Nemours & Co, Inc*
August Haeberlin
*Braendly Dye Works, Inc*
Thomas E Hannah
*Standard Bleachery & Printing Co*
John J Sokolinski
*The Arabol Mfg Co*

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***Chairman, Exhibits Committee***

**JOHN H HENNESSEY**
***Chairman, Registration and Finance Committee***

**WELDON G HELMUS**
***Chairman, Banquet Committee***

**SAMUEL A PETTUS**
***Chairman,***
***Transportation Committee***

## Transportation

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*E I du Pont de Nemours & Co, Inc*
Fred E Lademan
*The Robertson Bleachery & Dye Works*
John G Stass
*Burlington Mills Corp*

## Symposium

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*Consultant*
GEORGE L BAXTER, *Cochairman*
*Bradford Dyeing Association*
C W Bendigo
*American Cyanamid Company*
J Robert Bonnar
*General Dyestuff Corporation*
Charles W Dorn
*J C Penney Co*
Ernest H Hart
*Richmond Piece Dye Works*
Weldon G Helmus
*Fair Lawn Finishing Co*
Kenneth A Howry
*Daily News Record*

**GEORGE L BAXTER**
***Cochairman, Symposium***
***Luncheon Committee***

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*American Dyestuff Reporter*
Paul J Luck
*Calco Chemical Division,*
*American Cyanamid Company*
Winifred N Pardey
*General Dyestuff Corporation*
Henry L Young
*Interchemical Corp*

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*American Dyestuff Reporter*
Ernest L Caswell
*Ciba Company, Inc*
Louis J Dogin
*American Aniline Products, Inc*
Emil L Grilli
*Stein, Hall & Co*
Howard A Keenan
*Geigy Company, Inc*
George W Searell
*Jacques Wolf & Co*

**NORMAN A JOHNSON**
***Chairman, Printing***
***Committee***

## Reception

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*Richmond Piece Dye Works*
ARTHUR R WACHTER, *Cochairman*
*American Viscose Corporation*
Felix L Bume
*Tennessee Eastman Company*
Michael F Costello
*Jacques Wolf & Co*
Milton K Emerson
*United Piece Dye Works*

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Albert E Sampson, *Cochairman*

*Rhode Island*
Raymond B Taylorson, *Chairman*
Alfred J Lombard, *Cochairman*

**ERNEST H HART**
***Chairman, Reception Committee***

*Western New England*
Thomas J Gillick, *Chairman*
Carl Shilkowsky, *Cochairman*

*Hudson-Mohawk*
William A Nelson, *Chairman*
David O Hamer, Jr, *Cochairman*

*Philadelphia*
Arthur W Etchells, *Chairman*
A E Raimo, *Cochairman*

*Piedmont*
John Neely, *Chairman*
Henry A Rutherford, *Cochairman*

*Southeastern*
James W Swiney, *Chairman*

*South Central*
W G Agnew, *Chairman*
A J Kelly, *Cochairman*

*Mid-West*
Joseph H Jones, *Chairman*
Elliott Morrill, *Cochairman*

*Pacific Southwest*
Norman G Koehler, *Chairman*
Frank P Brennan, *Cochairman*

**ARTHUR R WACHTER**
***Cochairman, Reception Committee***

## Technical Program

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*National Aniline Division,*
*Allied Chemical & Dye Corp*

Paul J Choquette
*General Dyestuff Corporation*

Weldon G Helmus
*Fair Lawn Finishing Company*

E A Leonard
*Alexander Smith & Sons Carpet Co*

Henry E Millson
*Calco Chemical Division,*
*American Cyanamid Company*

Francis S Richardson
*Waldrich Co*

Charles H A Schmitt
*Sandoz Chemicals Works, Inc*

P J Wood
*Royce Chemical Co*

**HERMAN E WILDE**
***Chairman, Entertainment and Equipment Committee***

## Entertainment and Equipment

HERMAN E WILDE, *Chairman*
*Merck & Co*

Dino D Cimma
*Textile Colors Division,*
*Interchemical Corp*

Roy L Erlandsen
*Forstmann Woolen Co*

Robert I Horstein
*Frank Ix and Sons, Inc*

William H Kieffer
*Ciba Company, Inc*

Edwin G Sutcliffle
*Samuel Hird & Sons*

A Frank Tesi
*Celanese Corporation of America*

## Ladies

HERMAN E HAGER, *Chairman*
*General Dyestuff Corporation*

Jules J Devigne
*Textile Colors Division,*
*Interchemical Corporation*

**HERMAN E HAGER**
***Chairman, Ladies Committee***

Antoinette M Falcone
*Associated Merchandsiing Corp*

Helen Thackeray
*General Foods Corporation*

Mrs J Robert Bonnar

Mrs Jules J Devigne

Mrs Charles W Dorn

Mrs Herman E Hager

Mrs Weldon G Helmus

Mrs George O Linberg

Mrs Paul J Luck

Mrs C Norris Rabold

## Publicity

KENNETH A HOWRY, *Chairman*
*Daily News Record*

June Evans
*Bradford Dyeing Association*

Julius B Goldberg
*J P Stevens & Co, Inc*

Glenn D Jackson, Jr
*North Carolina Finishing Co*

Norman A Johnson
*American Dyestuff Reporter*

Adrian Price
*Dexter Chemical Co*

George H Schuler
*E I du Pont de Nemours & Co, Inc*

**KENNETH A HOWRY**
***Chairman, Publicity Committee***

**JAMES J MARSHALL**
***Chairman, Recreation Committee***

## Recreation

JAMES J MARSHALL, *Chairman*
*American Aniline Products, Inc*

Walter E Brewer
*Nopco Chemical Co*

W E Coughlin
*Good Housekeeping Institute*

Paul C Duggan
*Celanese Corporation of America*

Maurice N Manfra
*Johnson & Hardt, Inc*

Charles A Whitehead
*American Dyestuff Reporter*

## TV Presentation

JULIUS B GOLDBERG, *Chairman*
*J P Stevens & Co, Inc*

M Antoinette Falcone
*Associated Merchandising Corp*

Kenneth A Howry
*Daily News Record*

Norman A Johnson
*American Dyestuff Reporter*

Helen Thackeray
*General Foods Corp*

**JULIUS B GOLDBERG**
***Chairman, TV Presentation Committee***

# *Program*

## 30th NATIONAL CONVENTION

## Hotel Statler — New York — October 17, 18, 19, 1951

### Wednesday, October 17th

**9:00 am to 5:00 pm**—REGISTRATION—East end of Mezzanine

**10:00 am**—COUNCIL MEETING—Keystone Room

**10:00 am to 10:00 pm**—EXHIBITS

**2:00 pm to 5:00 pm**—PERSONNEL SERVICE—Office suite of AATCC Secretary, Dr H C Chapin (Inquire at Hotel Desk)

**2:00 pm to 5:30 pm**—DYEING GROUP MEETING—Keystone Room

Presiding: E A Leonard, Alexander Smith & Sons Carpet Co, Yonkers, N Y.

**2:00 pm**—"Attachment of Dyes to Cotton by Ether Linkage"—Dr G D Guthrie, Southern Regional Research Laboratory, U S Dept of Agriculture, New Orleans, La.

**2:35 pm**—"Textile Fibers from Synthetic Resins"—Dr George M Gantz, Lincoln Bleachery & Dye Works, Lonsdale, R I.

**3:30 pm**—"The Copper Method for Dyeing 'Orlon' Acrylic Fiber"—Dr R H Blaker (speaker) and Dr J F Laucius, Jackson Laboratory, E I du Pont de Nemours & Co, Inc, Wilmington, Del.

**4:05 pm**—"The Ogden Process for Simultaneous Stripping and Dyeing of Wool"—Fred A Prisley, Watson-Park Company, Ballardvale, Mass.

**4:25 pm**—"The Standfast Process of Dyeing"—Francis S Richardson, Waldrich Company, Delawanna, N J.

**2:00 pm to 5:30 pm**—PRINTING GROUP MEETING—Sky Top

Presiding: Francis S Richardson, Waldrich Company, Delawanna, N J.

**2:00 pm**—"Mechanics of Textile Printing"—D C McGiehan, Rice Barton Corporation, New York, N Y.

**2:45 pm**—"Some Observations in Textile Printing"—Otto Habel, General Dyestuff Corporation, New York, N Y.

**3:30 pm**—"The Use of Resinous-Copper Complexes in Printing"—Albert Royle, Sandoz Chemical Works, Inc, New York, N Y.

**4:00 pm**—"Effect of Emulsion Stability on Range of Color Values Obtained from Pigment Printing Media"—Howard C Woodruff, Alkyd Products Engineering, General Electric Co, Schenectady, N Y.

### Thursday, October 18th

**9:00 am to 5:00 pm**—REGISTRATION—East end of Mezzanine

**9:00 am to 12:00**—PERSONNEL SERVICE—AATCC Secretary

**10:00 am to 10:00 pm**—EXHIBITS

**10:00 am**—STUDENT PAPERS—Sky Top

**12:30 pm**—MIXED FIBERS LUNCHEON AND SYMPOSIUM—Grand Ballroom

Welcome: C Norris Rabold, AATCC President.

Presiding: Leonard S Little, Chairman, AATCC General Research Committee.

Luncheon speaker: J Spencer Love, Chairman of the Board, Burlington Mills.

Moderator at Symposium: J Robert Bonnar, AATCC Vice President.

**1:00 pm to 5:00 pm**—PERSONNEL SERVICE—AATCC Secretary

### Friday, October 19th

**9:00 am to 5:00 pm**—REGISTRATION—East end of Mezzanine

**9:00 am to 12:00**—PERSONNEL SERVICE—AATCC Secretary

**10:00 am to 5:00 pm**—EXHIBITS

**9:00 am to 12:15 pm**—AUXILIARIES AND TESTING GROUP MEETING—Keystone Room

Presiding: P J Wood, Royce Chemical Co, Carlton Hill, N J.

**9:00 am**—"The Engineering Approach to Woolen Fiber Lubrication"—Paul J Martin, Socony Vacuum Oil Co, Boston, Mass.

**9:30 am**—"Quantitative Data on the Adsorption of a Detergent by Cotton Sheeting under Textile Processing Conditions"—L H Flett (speaker), L F Hoyt and J Walter, National Aniline Division, Allied Chemical & Dye Corp, New York, N Y.

**10:10 am**—"Recent Advances in Wetting and Rewetting Test Methods"—Dr Leonard Shapiro, Synthron, Inc, Ashton, R I.

**10:45 am**—"Sequestering Agents in Textile Applica-

tions"—Dr J J Singer (speaker) and F C Bersworth, Bersworth Chemical Co, Framingham, Mass.

**11:20 am**—"Skin Irritation Tests for the Textile Industry"—Dr Louis C Barail, United States Testing Co, Hoboken, N J.

**9:00 am to 12:15 pm**—FINISHING GROUP MEETING—Sky Top

Presiding: Weldon G Helmus, Fairlawn Finishing Co, Fair Lawn, N J.

**9:00 am**—"Static Problems and their Control in the Textile Industry"—J H Hewson, The John Hewson Co, New York, N Y and Joseph A Lopez, Kanmak Mills, Kulpmont, Pa.

**9:35 am**—"Textile Applications of Brighteners"—Miss Opal L Sherburne (speaker), Antara Technical Division, General Dyestuff Corp, New York, N Y and Dr J Beiswanger, Central Research Laboratory, General Aniline & Film Corp, Easton, Pa.

**10:10 am**—"Advances in Theoretical and Practical Studies of Gas Fading"—W J Myles (speaker), W G Paist and V S Salvin, Celanese Corporation of America, New York, N Y.

**11:00 am**—"Characteristics of Cotton Fabrics Processed in Continuous Peroxide Bleaching Systems"—T E Bell (speaker) and N J Stalter, E I du Pont de Nemours & Co, Inc, Wilmington, Del.

**2:00 pm**—INTERSECTIONAL CONTEST—Sky Top
Presiding: Frank J O'Neil, Pacific Mills, Lawrence, Mass

Southeastern Section—"A Study of the Effect of Fabric Construction and Mercerization on the Light- and Washfastness of Vat Dyes"

South Central Section—"Toward a Simple Mechanical Means of Judging Hand"

New York Section—"The Measurement of Fabric Soiling"

Philadelphia Section—"Some Variables in Improving the Crease Recovery of Cotton Fabrics with Synthetic Resins"

Rhode Island Section—"The Continuous Dyeing of New Synthetic Fibers"

Northern New England Section — "The Effect of Mechanical Agitation on Rate of Dyeing"

**7:00 pm** — ANNUAL BANQUET AND BUSINESS MEETING—Grand Ballroom

President's Address—C Norris Rabold, President of AATCC

Olney Medal Award
"The Medalist, the Man"—Elliott Broadbent, Glenlyon Print Works, Phillipsdale, R I.
"The Medalist, the Scientist"—Dr W George Parks, University of Rhode Island, Kingston, R I.
"Address of the Medalist"—Raymond W Jacoby, Ciba Company, Inc, Providence, R I.

American Dyestuff Reporter Award

Intersectional Contest Awards—Frank J O'Neil, Pacific Mills, Lawrence, Mass.

Guest speaker—Harold G Hoffman, former Governor of New Jersey

## SPECIAL EVENTS FOR LADY GUESTS

### Wednesday, October 17th

**4:30 pm to 6:30 pm**—COCKTAIL RECEPTION PARTY—Rainbow Grill—Rockefeller Center

### Thursday, October 18th

**9:15 am** — Chartered BOAT RIDE around Manhattan Island (men may also attend)—Pier 83, foot of 43rd Street

**Afternoon**—SIGHTSEEING TRIPS

### Friday, October 19th

**9:30 am**—BREAKFAST at B Atlman's

**1:00 pm**—LUNCHEON AND FASHION SHOW at the Hotel Pierre

Ladies are also invited to attend any of the events on the regular program.

Consult the detailed ladies program which will be available at the Convention for further information.

**LAPEL BUTTONS**

**for**

**AATCC MEMBERS**

***These buttons bear the Seal of the Association and may be purchased by members in good standing from the National Secretary at $2.00 each.***

**DR H C CHAPIN**
**LOWELL TEXTILE INSTITUTE**
**LOWELL, MASSACHUSETTS**

# YOUR HOST, THE NEW YORK SECTION

P J WOOD

*Past President, AATCC*
*Technical Director, Royce Chemical Co*

THIS is the largest section of the Association in point of membership. It was the third section to be organized, Rhode Island being the first and Northern New England the second. It was due to the energy and enthusiasm of Elvin H Kilheffer, the second National President of the Association, that the necessary signature were obtained to present a petition to the Council at its meeting in Boston on January 13, 1922.

Of the 38 men signing the petition, only six remain members of the section: Thomas D Ainslee, Ralph M Fischer, Daniel P Knowland, John J Sokolinski, John F Warner and P J Wood.

Walter E Hadley has been made an honorary member, nine members have affiliated with other sections, many of the others have passed along.

Meetings have been held ever since organization in both New York and New Jersey.

At the inaugural meeting to organize the section, which was held in the Chemists' Club, New York, at the invitation of Elvin H Kilheffer, who had been appointed by the Council as secretary *pro tem* to proceed with the formation of the section, a committee was appointed to prepare a slate of officers to be voted on at the next meeting.

Dr Cathcart reported for this committee at the meeting held at the Hotel Pennsylvania, on the evening of April 21.

Officers elected were: P J Wood, *Chairman;* W R Cathcart, *Vice Chairman;* E G Quin, *Secretary-Treasurer.* Elected to the Executive Committee were: Oscar R Flynn, Frank J Oesterle, Elvin H Kilheffer and Walter M Scott.

The first technical meeting was held the following October when a general discussion was carried on regarding problems submitted by members. At this meeting, it was decided to invite the Association to hold its Annual Meeting in New York on Dec 2. The arrangements committee appointed by the Chairman consisted of Elvin H Kilheffer, W E Mitchell, C A Mace and L C Lewis, newly elected Secretary who replaced E G Quin, who had died suddenly since the organization meeting.

The Annual Meeting of the Association was duly held under the able chairmanship of Elvin H Kilheffer. The interest was great, although the membership was small, amounting to only 398, of which 265 were charter members.

The New York section has served as host to the National Association on five occasions, including the first one mentioned. The dates of the conventions and the chairman of the committee on arrangements were as follows:

December 3, 1947—Elvin H Kilheffer
December 8, 1934—Henry F Herrmann
October 18, 1940—Patrick J Kennedy
January 3, 1946—Emmett J Driscoll

Co-Chairman of the present Convention Committee are Charles W Dorn and Paul J Luck.

On April 16, 1943, the New York Section celebrated its twenty-first anniversary, at the Down-town Club in New York. By a stroke of wonderful good fortune it was possible to get together all living past chairmen of the section, as follows (in reverse order of service):

Patrick J Kennedy
Harry R Tisdale
J Ernest Meili
Louis S Zisman
George L Baxter
Ephraim Freedman
Henry F Herrmenn
Robert Gaede
Samuel L Hayes
Daniel P Knowland
Herbert Grandage
Elvin H Kilheffer
P J Wood

Since that time, Emmett J Driscoll, Dr Herman E Hager, Charles W Dorn and Paul J Luck have served. P F Kingsbury and E F L Lotte are the only past chairmen who have died.

Four members of the New York Section have served as national presidents: Elvin H Kilheffer, P J Wood, Carl Z Draves and Henry F Herrmann.

Since our beloved Founder was taken from us, two members of the New York Section have carried on the work of chairman of the Executive Committee on Research and General Research Committee with distinction, J Robert Bonnar and Leonard S Little. Many members have served faithfully as councilors on the National Council.

**This section has shown steady growth from the original list of 38 petitioners to a membership of 1346 as of May 1, 1951.**

**Past Chairmen of the New York Section assembled at a meeting in 1943.**

Standing (l to r): Herbert Grandage, Samuel L Hayes, Louis S Zisman, Ephraim Freedman, George L Baxter, Patrick J Kennedy, Henry F Herrmann and Harry R Tisdale.
Seated: P J Wood, Daniel P Knowland, J Ernest Meili, Robert Gaede, Elvin H Killheffer.

# *Exhibitors*

## AT THE 30th NATIONAL CONVENTION

NEARLY ninety exhibitors will constitute the largest exposition to date to be held in conjunction with an AATCC National Convention as the 30th Annual Meeting gets under way. The Exposition will be a most important activity and marked efforts are being made to make displays informative and attractive.

Departments A and C will be devoted to dyestuffs, chemicals, auxiliaries, machinery and laboratory equipment and publication exhibits. Department B, the Fiber and Fabric Section, will stress technical information and service in the dyeing and finishing of synthetics and blends, thereby complementing the theme of the Symposium Luncheon on mixed fibers.

Show hours will be as follows:

Wednesday, October 17—10 am to 10 pm

Thursday, October 18—10 am to 10 pm

Friday, October 19—10 am to 5 pm

Department A (Booths 76 to 125) is located on the 18th Floor (Penn Top & Foyer).

Departments B & C (Booths 1 to 75) are located on the Mezzanine Floor (Georgian Room & Foyer, Parlor C, Rotunda, Parlors 1 and 2).

There follows an alphabetical listing of exhibitors. Descriptions of each exhibit and a listing of personnel in attendance at each follow the floor plan diagrams.

### DEPARTMENTS A & C

*Exhibitor* — *Booth(s)*

Alco Oil & Chemical Corp. . . . . 29-30
Amalgamated Chemical Corp. . . . . 14-15
American Aniline Products, Inc. . 108-109
AMERICAN DYESTUFF REPORTER . . . . . 50
American Optical Company. . . . . 49
American Polymer Corporation. . . . . 87
Anderson Machine Shop Inc. . . . . 94
Arnold, Hoffman & Co, Inc. . . . . 16-18
Atlantic Chemical Company, Inc. . . 27-28
Atlas Electric Devices Co. . . . . 22-23
Barco Manufacturing Co. . . . . 24
Bersworth Chemical Company. . . . . 85
Borne, Scrymser Company. . . . . 33
The Brush Development Company. . . 48
Calco Chemical Division, American Cyanamid Co . . . . . 6-8
Carlic Color & Chemical Co, Inc. . . 25
Catalin Corporation of America. . . . . 9-10
Ciba Company Inc. . . . . 31-32
Commonwealth Color & Chemical Co 89
The Cravenette Company, U S A. . . . 103
Dexter Chemical Corporation. . . . . 79B
Dow Corning Corporation. . . . . 83-84
E F Drew & Co, Inc. . . . . 80
E I du Pont de Nemours & Company, Inc . . . . . 11-12
Emery Industries, Inc. . . . . 93
Fairchild Publications . . . . . 54, 79A
Fisher Scientific Company, Eimer & Amend Div. . . . . 31
Gaston County Dyeing Machine Co. . 116
Geigy Company, Inc. . . . . 81
General Dyestuff Corporation. . . . . 40-42
David Gessner Company. . . . . 69
Glasco Equipment Corporation. . . . . 77
The John Hewson Company. . . . . 104
The Hilton-Davis Chemical Company Division . . . . . 50B-50C
E F Houghton & Co. . . . . 43-45
Instrument Development Laboratories, Inc . . . . . 3
Interchemical Corporation . . . . . 47
Kelco Company . . . . . 32
Macbeth Corporation . . . . . 100
Monsanto Chemical Company. . . 110-111
Morrison Machine Co. . . . . 50D-50E
National Aniline Division, Allied Chemical & Dye Corporation. . . . . 98-99
National Milling & Chemical Co. . . . 107
National Starch Products Inc. . . . . 82
Nopco Chemical Company. . . . . 4-5
Nuodex Products Co, Inc. . . . . 13
Onyx Oil & Chemical Co. . . . . 95
Pharma Chemical Corporation. . . . . 26
Rayon & Synthetic Textiles. . . . . 53
Richmond Oil, Soap & Chemical Co. . 101
Rohm & Haas Company. . . . . 114-115
Royce Chemical Company. . . . . 79
Sandoz Chemical Works, Inc. . . . . 20-21
Sarco Company, Inc. . . . . 50A
Scholler Brothers, Inc. . . . . 1-2
Seydel-Wooley & Company. . . . . 105
Alexander Smith, Inc. . . . . 78
Smith, Drum & Company. . . . . 112-113
Socony-Vacuum Oil Company, Inc . . . . . 120-121
South Florida Test Service. . . . . 102
Standard Fabricators, Inc. . . . . 92
Ten-Co Machine Co. . . . . 88
Tennessee Eastman Company Div. . . 96-97
Textile Age, Inc. . . . . 19
Textile Bulletin . . . . . 52
Textile Industries. . . . . 38-39
Textile World. . . . . 106 & 119
United States Testing Company, Inc. 46
Venango Engineering Co, Inc. . . . . 125
Virginia Smelting Company. . . . . 117-118
Wallerstein Company, Inc. . . . . 36-37
Warwick Chemical Company Div, Sun Chemical Corp. . . . . 124
Westinghouse Electric Corporation . . . . . 122-123
Jacques Wolf & Co. . . . . 76
Wyandotte Chemicals Corporation . . . . . 90-91

### DEPARTMENT B

American Bemberg Corp. . . . . 55-56
American Wool & Cotton Reporter. . 54A
Joseph Bancroft & Sons Co. . . . . 60
Celanese Corporation of America. . . . . 63, 64, 67 & 68
Chemstrand Corporation . . . . . 65
E I du Pont de Nemours & Co, Inc. . 71-75
Italviscosa . . . . . 69
North American Rayon Corp. . . . . 55-56
Owens Corning Fiberglas Corp. . . . . 61-62
Union Carbide & Carbon Corporation, Carbide & Carbon Chemical Division, Textile Fibers Department 70
Virginia-Carolina Chemical Corporation . . . . . 66

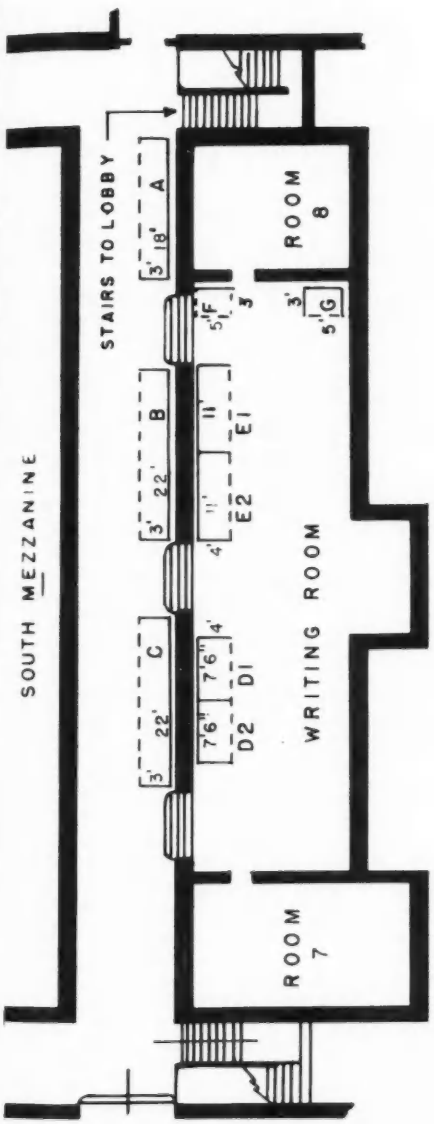
### ADDED SPACE

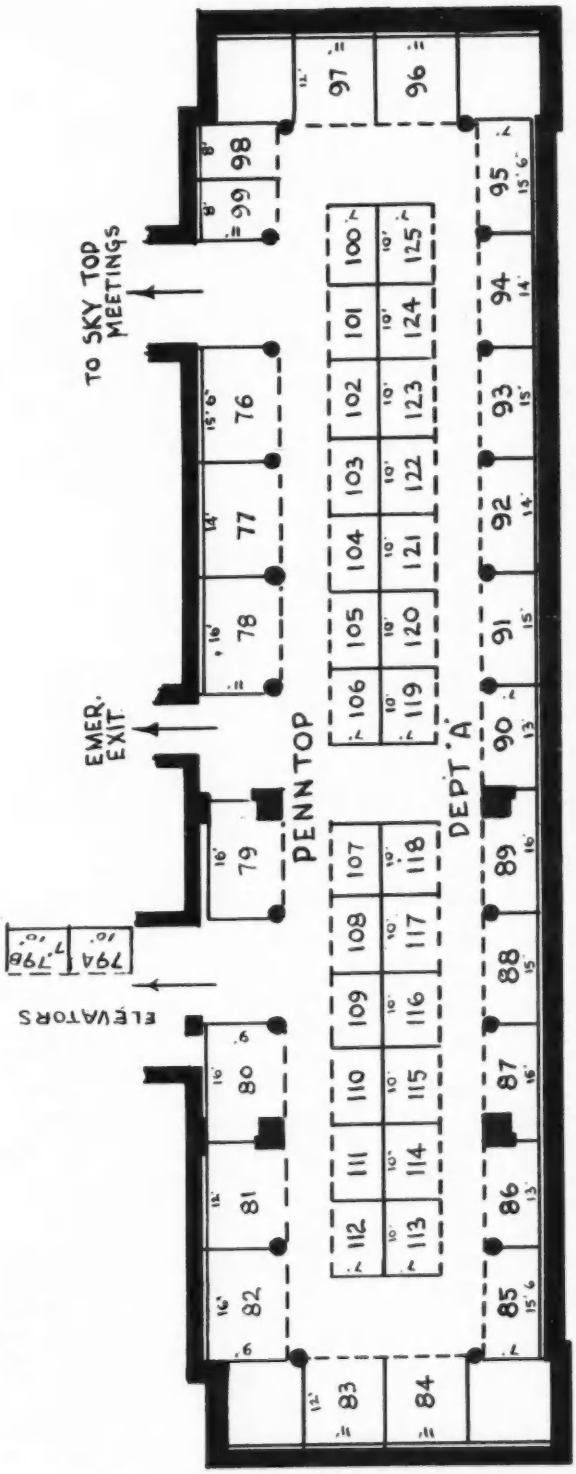
#### SOUTH MEZZANINE EXHIBITS GROUP

American Association of Textile Chemists and Colorists. . . . . A-B-C
Brabender Corporation . . . . . E-2
Custom Scientific Instruments, Inc. . . . E-1
Watson-Park Company . . . . . F

PARLOR 'A'
PARLOR 'B'
ASS'N FUNCTIONS AND GROUP OFFICES
LADIES ROOM
MENS ROOM
PARLOR 'C'
FOYER
GEORGIAN ROOM
DEPT "C"
CORRIDOR
ELEVATOR LOBBY
ROTUNDA
54A CONVENTION OFFICE
PARLOR 2
DEPT "B"
TO GRAND BALLROOM MEETINGS
PARLOR 1
DEPT "B"
REGISTRATION
EAST MEZZANINE
MAIN ENTRANCE TO DEPTS "A" & "B" AND GR. BALLROOM MTINGS
UP

# FLOOR PLANS OF EXHIBIT AREAS



## Alco Oil and Chemical Corp

Trenton Ave and William St
Philadelphia, Pa
Booths 29-30

ON DISPLAY: the development and application of the Vulcanols as textile finishing materials.

IN ATTENDANCE: Arthur E Jones, Jr, vice president; John W Jordan, director of sales; Donald W Robinson and F M Tolin, sales representatives.

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## Amalgamated Chemical Corp

Rorer and Ontario Sts
Philadelphia, Pa
Booths 14-15

ON DISPLAY: products for the wet processing and finishing of textiles.

Amalgamated will feature Evanate for level dyeing of nylon; Dynadye for dyeing Dacron; and Filaseal Softener FA, a new patented softener for synthetic fibers.

IN ATTENDANCE: Harold B Dohner, president; Robert A Bruce, treasurer; Hillary Robinette, Jr, research director; John M Jester, Jr, secretary; Charles E Seel and George C Harkins, sales engineers; and Alton Siddons, technical service.

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## American Aniline Products, Inc

50 Union Sq
New York, N Y
Booths 108-109

ON DISPLAY: a modernistic exhibit, showing in perspective this Corporation's complete line of dyestuffs and textile specialties. A lighted, motion unit will portray the types of dyeings obtainable with proper use of the Amanil* Napthol line along with its textile specialty—Stabilon*—to eliminate crocking. The center theme will be a continuing series of demonstrations portraying the defoaming qualities of Depuma*, the newest of the AAP specialties.

IN ATTENDANCE: executives from the New York office, company branch managers, branch sales and technical staff.

* Reg U S Pat Off

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## American Association of Textile Chemists and Colorists

Lowell, Mass
Booths A-B-C

ON DISPLAY: test equipment including the Accelerotor, Calco and Monsanto Crease Recovery Testers, Crockmeter, Detergency Comparator, Dynamic Dimensional Change Meter, Fade-Ometer, Fire Resistance Test Chamber, Flammability Tester, Gas Fading Test Chamber, Launder-Ometer, Perspirometer, Rain Tester, Scorch Oven (Chlorine Retention), and Snag Tester. Particular emphasis will be placed on the Accelerotor, Dynamic Dimensional Change Meter, Gas Fading Test Chamber, Scorch Oven and Snag Tester since they are completely new or are recent modifications of older models.

IN ATTENDANCE: Director of Research Dr Harold W Stiegler and several members of his staff. It is expected that some committee members will also spend some time in the Exhibit Section, in order to give first hand information concerning the activities of the various committees.

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## American Bemberg

261 Fifth Ave
New York, N Y
Booths 55-56

ON DISPLAY: various types of Bemberg and Narco fabrics and finishes as well as a display of skeins and cones of yarn.

American Bemberg and North American Corporation will have a joint booth.

IN ATTENDANCE: J C Fortune, Adv Mgr, Bemberg & North American; H G Spitzer, sales manager, Bemberg; N Polonsky, vice president, North American; R Devine, M Phinney, J Lewy, F Love, W Forsthoff and J B Dunlop, North American; G Monk, J Furr, V Bez, J Ashley and E Benzing, Bemberg.

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## American Dyestuff Reporter

44 E 23rd St
New York, N Y
Booth 50

ON DISPLAY: trade publication.

IN ATTENDANCE: N A Johnson, M D Reeser, H A Stauderman and C A Whitehead.

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## American Optical Company Instrument Division

Buffalo, N Y
Booth 49

ON DISPLAY: a new rapid-scanning Spectrophotometer; a low-priced polarizing microscope; a phase microscope and laboratory instruments.

The Spectrophotometer, which reportedly operates on a new principle utilizing both optics and electronics, is equipped to analyze the color of both transparent and opaque materials. The spectrophotometric curve is displayed on the face of a cathode ray tube. Its speed is said to make it particularly adaptable to studying rapid color changes. The image may be photographed by motion picture or still camera for record purposes.

The P45 polarizing microscope with built-in light source is useful in the synthetic fiber field for process control and chemical analysis. The AO Phase Microscope makes possible the determination of effects of certain processes (e g, lanaset on wool), inclusions in synthetic fibers, etc.

IN ATTENDANCE: O E Schaefer, A R Silberg, W E Folland and J V Cockin.

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## American Polymer Corp

101 Foster St
Peabody, Mass
Booth 87

ON DISPLAY: synthetic resin as new raw materials for the treatment of textiles and yarns. These will include the following "Polyco" items, all developed within the past year: 953-7A, polyvinylacetate emulsion permanent textile finish; 117-SS and 117-H, polyvinyl acetate emulsion hosiery finish—permanent finishes of cotton and rayon; 337-XS, polyvinyl acetate tripolymer — permanent laundry finishes; 446, vinyl chloride copolymer emulsion for coatings and saturants; 437, polyacrylic acid—size for nylon weaving; 328, size for weaving acetate rayon; 329 and 296BT, synthetic gums for printing pastes; polyvinyl acetates polymerized in various solvents; 395, polyvinyl alcohols high viscosity completely hydrolyzed; 389, polyvinyl alcohols partially acetated; and 401, polyvinyl alcohols low viscosity completely hydrolyzed.

Special features to be emphasized will include permanent finishing of cottons, nylon sizes, synthetic acrylic gums and rayon sizes.

IN ATTENDANCE: Dr S J Baum, general manager; Dr H Nadius, director of research; and W L Abromowitz, Sales Department.

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## American Wool & Cotton Reporter

286 Congress St
Boston, Mass
Booth 54A

ON DISPLAY: trade publication.

## Anderson Machine Shop, Inc

Brook Rd
Needham Heights, Mass
Booth 94

ON DISPLAY: Pacific Evenness Tester for measuring and recording the evenness, weight and count of sliver and yarn.

The Pacific Evenness Tester produces a graph showing the variations of any fibrous material, cotton, woolen, worsted, blends and synthetics from 8 ounces per 5 yards to 1/100s worsted. From the graph the following may be ascertained: weight of material; average weight of any measured length; average percentage of variation for any length, based on the weight of raw stock, as reflected by cross-sectional thickness; percentage of maximum deviation from the average mean weight of the material being tested; average amount of difference from desired weight.

Within the past year, the Research Department of Pacific Mills has developed an additional head for the tester, which incorporates a single 5/8 groove for testing 4 to 8 ounces per 5 yard or 5-10 pounds per 100 yard sliver. This is said to enable testing from triple worsted card sliver delivery through and including punch ball sliver as fed to the Noble comb, as well as the entire range of sliver in jute manufacturing.

IN ATTENDANCE: J G Anderson, president; A G Anderson, sales manager.

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## Arnold, Hoffman & Co, Inc

55 Canal St
Providence, R I
Booths 16-18

ON DISPLAY: Arnold, Hoffman dyestuffs and auxiliaries, with emphasis on Ahcoquinone wool dyes, Ahcovat dyes and the Solacet colors. The auxiliary section of this exhibit will feature goods finished with Ahcovels, goods aftertreated with Ahcofix and a display of a recently developed stripping agent.

The exhibit itself will feature a replica of the newly renovated Providence office.

IN ATTENDANCE: T H Roberts, W C Cobb and E R Herbertson, vice presidents; L G Tubbs, assistant general sales manager; A C Merrill, sales service; W T Clarke, New England sales manager; R Tull, New York sales manager; and D L Turner, Southern sales manager.

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## Atlantic Chemical Company, Inc

2072 Smith St
Centredale, R I
Booths 27-28

ON DISPLAY: newly-developed products for use in the wet-processing of military and civilian fabrics; testing experiments showing the properties of fabrics finished with some of Atlantic's new chemicals.

Among the products on display will be antistatic agents for the destaticizing of nylon; a one-bath water-repellent fire-retardant compound; Atconil DAC-25 for acetate dye dispersion; Atco CSN for solvent cleaning and scouring in the water phase; a one-bath water-repellent mildewproof for government work; Metaperm metallic water phase printing binders; Atco Merpene Special, a wetting agent for instantaneous wetting in mercerizing baths; and Atcoperm, a resin modifier for permanent stiffness with urea-formaldehyde and melamine-formaldehyde resin finishing.

IN ATTENDANCE: Hugh J Bonino, president; Joseph Buonanno, vice president and treasurer; James C Shore, technical director; Joseph E Weldon, chemist; John A Fanning, Walter Sullivan, Edward Bannigan and Thomas W Kitchen, salesmen.

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## Atlas Electric Devices Co Inc

361 West Superior St
Chicago, Ill
Booths 22-23

ON DISPLAY: the latest model Fade-Ometer and Launder-Ometer. Featured with the Launder-Ometer will be the Metal Specimen Containers employed in the new #3A Accelerated Washfastness Test, which reportedly provides results in one-tenth the time required by the old standard method. The production model Accelerotor, currently available for general distribution, will be on display for the first time. Also on exhibit will be the Scorch Tester for the new proposed Chlorine Retention Test.

IN ATTENDANCE: John W Lane, president; J E Norton, director of research and development; Fred Schlayer and Leo I Monaghan, sales representatives.

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## Joseph Bancroft & Sons Co

Wilmington, Del
Booth 60

ON DISPLAY: a broad and complete showing of all types of "Everglaze" fabrics.

IN ATTENDANCE: George J Forrest, Sanford P Young, Lola A Martin and Jacqueline Decker.

## Barco Manufacturing Co

1801-1815 Winnemac Ave
Chicago, Ill
Booth 24

ON DISPLAY: the complete line of Barco joints—flexible ball, swivel, revolving and swing. Emphasis will be in the new IB Revolving Joints, a working model of which will demonstrate its low torque, compact size, rugged construction and easy maintenance features.

IN ATTENDANCE: David R Whitehead, New York representative; B T Conybear, Philadelphia representative; F M Moore, product development; and James O Heyworth, sales manager, Industrial Dept.

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## Bersworth Chemical Company

Framingham, Mass
Booth 85

ON DISPLAY: an animated sign utilizing some of the lesser-known properties of polarized light; specimens of various textiles that have been dyed and wet processed in waters contaminated with metallic ions both with and without the addition of the various Versenes; and a small mechanical exhibit showing the effects of Versene T in iron contaminated caustic.

IN ATTENDANCE: Dr John J Singer, chief chemist; George H Rhodes, technical salesman; and Ronald K Bersworth, sales representative.

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## Borne, Scrymser Company

632 South Front St
Elizabeth, N J
Booth 33

ON DISPLAY: process oils, featuring Minerol, Meon, Minotints and Tintinols.

IN ATTENDANCE: W E Smith, W M Dynes, C Kozoriz, S Merlo, D Epstein, L D Barta, Jr and R G Keppler.

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## Brabender Corp

Rochelle Park, N J
Booth E-2

ON DISPLAY: the Semiautomatic Moisture Tester (conditioning oven), combination drying oven and analytical balance; and the Viscograph, an experimental starch cooking and cooling apparatus. In the Moisture Tester, percent moisture loss is read from an illuminated dial. No cooling down, reweighing or calculating is

required, it is reported. The Viscograph reportedly operates at a constant temperature increase or decrease of approximately 1.5°C per minute. Brabender cites its capabilities in determining (a) the viscosity of cooked starch and the amount of water required in commercial starch cooking apparatus to obtain desired viscosity, (b) the influence of certain enzymes on starch viscosities, (c) the influence of resin additions on starch viscosities, (d) the viscosity of size after cooling, and (e) the stability of size under slow but constant agitation.

IN ATTENDANCE: Arthur Hartkopf, president.

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## The Brush Development Company

3405 Perkins Ave
Cleveland, O
Booth 48

ON DISPLAY: the BL-314A Uniformity Analyzer and the BL-320 Universal Strain Analyzer. The former measures and records irregularities in weight per unit length of yarn, roving and sliver. The Strain Analyzer utilizes combination equipment to record either static or dynamic strains up to 100 cps; direction as well as magnitude can be read from the chart.

IN ATTENDANCE: A J W Novak, commercial engineering manager; E M Hensley, commercial engineer; Eugene Cahn, M J Lichtenstein and Robert Asen, field engineers.

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## Calco Chemical Division American Cyanamid Company

Bound Brook, N J
Booths 6-8

ON DISPLAY: Calco's line of fast dyes, with emphasis on required fastness properties for successful marketing of textile fabrics.

IN ATTENDANCE: members of management of Calco Dyestuff Sales and Application Research Departments, field representatives of the Dyestuff Department and technical service personnel.

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## Carbic Color & Chemical Co, Inc

451-453 Washington St
New York, N Y
Booth 25

ON DISPLAY: Carbic's products.

IN ATTENDANCE: Carl W Kuhl II, vice president; Thorwald Larson, New England manager; Dyer S Moss, Southern manager; Edmond A Lutz, technical director; Fred Gonnerman and Nathan W Akst.

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## Catalin Corporation of America

1 Park Ave
New York, N Y
Booths 9-10

ON DISPLAY: an exhibit of an institutional nature, built up around Catalin facilities for the manufacture and distribution of uniform quality finishing resins. A highlight will be the announcement of the opening of the new Thomasville, N C, plant.

IN ATTENDANCE: Leo Beck vice president; Alex Malashevitz, technical director; V W Moss, Eastern Sales Mgr; J Hyman, chief chemist; P Krentel, W Bell and W Hupfel, sales representatives; R Esterly and J Austin, technical representatives.

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## Celanese Corporation of America

180 Madison Ave
New York, N Y
Booths 63-64, 67-68

ON DISPLAY: all types of fabrics woven with acetate yarns and staple. The versatility of weave, texture and color made possible by the use of acetate in blends with natural and other chemical fibers will be demonstrated. New apparel and home furnishings fabrics will attest to the progress and growing importance of acetate fibers, with particular emphasis on their contribution to the carpet industry.

IN ATTENDANCE: Robert Burns, P C Duggan, G C Ward, V S Salvin and Dr A F Tesi.

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## Chemstrand Corporation

350 Fifth Ave
New York, N Y
Booth 65

ON DISPLAY: samples of fabrics and merchandise containing Acrilan.

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## Ciba Company Inc

627 Greenwich St
New York, N Y
Booths 34-35

ON DISPLAY: models of Ciba's new manufacturing plant at Toms River, N J.

IN ATTENDANCE: S I Parker, vice president & general sales manager; J P Bauer, vice president, Technical Service Department; W H Kieffer, New York sales manager; F F Jacobs, director, Research & Development Laboratory; M G Stern, laboratory manager; G Walsh, assistant laboratory manager; E P Ward, head, Vat Color Dept; G Wiseman, head, Auxiliary Dept; G L Battye, head, Wool Dept; H Mullner, head, Cotton Dept; E L Caswell, head, Package Dyeing Dept; R T McGuire, head, Print Dept; and J Harding, head, Rayon Dept.

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## Commonwealth Color & Chemical Co

3240 Grace Ave
New York, N Y
Booth 89

ON DISPLAY: a complete line of Commonwealth textile chemical specialties (e g, detergents, penetrators, cationic softeners, hosiery finishes, dyeing and bleaching assistants for synthetic fibers, etc) and textile materials which have been processed using these products. Of special interest will be samples of nylon hosiery finished with Nilaton 51 and dyed samples of Orlon and Dacron, illustrating the advantages of the Company's new dyeing assistants.

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## The Cravenette Company, USA

Eighth and Madison Sts
Hoboken, N J
Booth 103

ON DISPLAY: water repellent chemicals, of which the durable and renewable types will be emphasized. Emphasis will also be placed on a combination water repellent and mildew resistant developed by Cravenette in the past year.

IN ATTENDANCE: Robert C Hunzinger, vice president; Sam S Sinatra and Fred Barbaro, sales representatives.

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## Custom Scientific Instruments, Inc

541-543 Devon St
Arlington, N J
Booth E-1

ON DISPLAY: SPI Flammability Tester; CSI High Speed Angle Centrifuge; CSI Stoll Quartermaster Universal Wear Tester; CSI Stoll Flex Machine.

The flammability tester developed by the Society of the Plastics Industry measures relative flammability hazard of vari-

ous sheet materials from 0.001-0.250 thick or more.

Two styles of interchangeable rotors aid in giving maximum flexibility to the CSI centrifuge.

The CSI-Stoll QM Universal Wear Tester is a multipurpose instrument for measuring resistance to surface and edge abrasion; flex abrasion; edge fold and projection abrasion and folding. The CSI Flex Machine is an outgrowth of wear tester, performing only the flex abrasion operation. It is much smaller dimensionally and in weight. It is said to have been developed with production control in mind.

IN ATTENDANCE: H J Bultman, Jr, sales manager; R J Novotny, chemical engineer; J Eaglesham, technical sales.

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## Dexter Chemical Corporation

819 Edgewater Rd
New York, N Y
Booth 79-B

ON DISPLAY: works from the Dexter Library of the History of Chemistry, many of which are original manuscripts or first editions. Among the documents will be: "Experiments on Bleaching", the first book on the chemistry of bleaching, published in 1756 by Francis Home; Chemical Essays of Charles William Scheele, who discovered chlorine and its bleaching properties; "Essay on the New Method of Bleaching", a document in which Claude Louis Berthollett recorded his development of the first chlorine bleaching process; sample dyed cotton swatches prepared by Cornelius Maloney in 1833; a number of rare works on alchemy; and "Micrographia", first edition, 1665, in which Robert Hooke anticipated the manufacture of synthetic fibers and shows the first micrographs of textile fibers.

IN ATTENDANCE: Joseph B Evans, director of sales; Sidney M Edelstein, technical director; Leonard Slesinger, Southern sales manager; Azel W Mack, New England sales manager; Eugene P Henley, Dudley B Setzler, Mortimer Bayer, Philip Swartz, salesmen; and Adrian S Price, director of advertising and public relations.

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## Dow Corning Corporation

Midland, Mich
Booths 83-84

ON DISPLAY: DeCetex 104, a silicone water repellent treatment for fabrics; Dow Corning silicone oil and grease lubricants, and Dow Corning silicone (Class H) electrical insulation.

Dow Corning states that DeCetex 104 is a super-durable water repellent which retains its effectiveness even after several dry cleanings or launderings, in addition to possessing superior stain resistance. Silicone oils and greases are said to provide long lubrication life through their stability over a broad temperature span. Silicone electrical insulation reportedly offers moisture- and heat-resistance far superior to organic electrical insulation materials.

IN ATTENDANCE: F M Dennett, manager, Textile Water-Repellents Laboratory; C E Gibson, assistant to Mr Dennett; N C Foster and R E Knopf, technical representatives.

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## E F Drew & Co, Inc

15 E 26th St
New York, N Y
Booth 86

ON DISPLAY: a large reproduction of the facilities Drew uses to convert the vegetable and animal oils of farm, forest, cocoanut grove and sea to specific end uses in the textile industry.

The company's position as a basic producer of chemical products for the industry will be stressed.

IN ATTENDANCE: H Carman, S Cohen, H A Crove, W Cummings, L W Davis, W H Kirkpatrick, W Meyers, J P Redston, A Troy, Dr G Zinzalian and K W Hartmann (vice president).

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## E I du Pont de Nemours & Company, Inc

Wilmington, Del
Booths 11-12 (Dyestuffs Division)

ON DISPLAY: fine chemicals and dyestuffs. The fine chemicals will include a number of finishing compounds, e g, Avitone softener, Zeset stabilizing resin, Zelan and Aridex water repellents. Panels will illustrate the development of colors for Orlon and Dacron, the application of vat colors to wool, and the end use of garments of some of the material shown on the other panels.

IN ATTENDANCE: C B Harris, Dyestuffs Division section manager; other laboratory technicians.

Booths 71-75 (Fibers Division)

ON DISPLAY: du Pont fibers (Orlon, Nylon, rayon, Dacron, etc) and fabrics.

## Emery Industries, Inc

Carew Tower
Cincinnati, O
Booth 93

ON DISPLAY: Twitchell wool oils; Twitchell worsted oils; Twitchell oils for cotton finishing; Twitchell rayon oils and a complete line of fatty acids and derivatives.

Service to the customer will be featured by showing territorial coverage by direct sales and staff representation. Important processing steps for various classes of fibers will be illustrated showing the influence of Twitchell product at these points.

IN ATTENDANCE: R F Brown, chemical sales manager; V W Colby, assistant chemical sales manager; N A Ruston, director of development and service; W T Meinert, development and service; W H Shields, assistant research director; H T Buckley, senior chemist, textile research; H D Armitage, J M Washburn, Jr, J W Ritz and W A Colby, district managers; J P Kramer, R J Roberts, J P Clancy and T L Reilling, sales; A C Fusaro, advertising.

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## Fairchild Publications

7 E 12th St
New York, N Y
Booth 54, 79-A

ON DISPLAY: trade publication.

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## Fischer Scientific Company Eimer & Amend Division

633 Greenwich St
New York, N Y
Booth 31

ON DISPLAY: laboratory apparatus.

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## Gaston County Dyeing Machine Co

Stanley, N C
Booth 116

ON DISPLAY: a stainless steel laboratory dyeing machine and a combination raw stock and single package extractor.

The dyeing machine, which is suitable for high-temperature or conventional dyeing, features automatic controls for the temperature and reversal mechanism.

IN ATTENDANCE: G Lindner, export manager; George H Hacker, vice president and sales manager; Ray P Craig, vice president and secretary; and Gordon Hacker.

## Geigy Company, Inc

89-91 Barclay St
New York, N Y
Booth 81

ON DISPLAY: dyestuffs and textile auxiliaries.

The following products will be featured:

(1) Sequestrene—a stable sequestering agent used in scouring, bleaching and dyeing to alleviate conditions arising from hard water, iron and other metallic contaminants.

(2) Tinopal WG* — a new optical bleach for wool and nylon, which is said to yield a true white, free from pinkish tendencies. It is reported that this product is suitable for application in peroxide bleach baths.

(3) Cuprophenyl dyes — the covering power of this line for fabrics containing "dead" cotton with no sacrifice of light and wash fastness will be exhibited.

Other products and processes on exhibit will include: solvent dyeing of acetate rayon with acid dyes fast to cross-dyeing and washing; chrome-steam-package-dyed nylon yarn for hosiery with heels of contrasting bright and deep colors from package-dyed yarn that stands cross-dyeing and for argyle hose; Cuprophenyl dyes for mercerized cotton hose; Nylon Resist MFF for reserving nylon in dyeing wool and nylon blends with acid, Gycolan and Erio Chrome dyestuffs; Tinopal AN*, a new fluorescent whitening agent for acetate and nylon fabrics; and Mitin Durable Mothproofing. To illustrate the last-named process, a miniature clothes closet will be employed contrasting Mitin Mothproofed and untreated garments.

IN ATTENDANCE: H A Keenan (in charge), R C Allison, W W Barre, E W Birdsall, A A Caddell, J C Dempsey, D Ekstrom, B L Hathorne, E V Helms, R Keenan, D P Knowland, J S Lange, F F Myers, A J Rooney, K E Schmalenberger, H C Spatz, R H Schweibert, D V Speese, H L Steen, W H Turner, L C Voss, R L Ward, G A Wilkie.

* Developed within past year.

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## General Dyestuff Corporation

435 Hudson St
New York, N Y
Booths 40-42

ON DISPLAY: new developments of dyestuffs and textile chemicals emphasizing an improved fast color application process and a new control procedure in the application process and a new control procedure in the application of vat dyestuffs. Recent developments in the dyeing of the newer synthetic fibers will also be stressed.

IN ATTENDANCE: J R Bonnar, C A Bergman, P J Choquette, Dr C Z Draves, Dr H E Hager, E Hansen, J H Hennessey, Dr H Luttringhaus, D E Marnon, L S Thompson.

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## David Gessner Company

41 Fremont St
Worcester, Mass
Booth 80

ON DISPLAY: model shrinking range with tensionless dryer.

IN ATTENDANCE: John P Franklin, president; James Barr, sales manager; Richard C Franklin and Richard L Bernard.

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## Glasco Equipment Corporation

2 Wait St
Paterson, N J
Booth 77

ON DISPLAY: Glasco dye jig enclosure; dyehouse truck; color pails; containers and tanks and photographs of dye becks and other equipment.

Special features of the exhibit will include the equipment on the dye jig enclosure, drainage of the dyehouse truck, and the high temperature controls and color distribution of new dye becks.

IN ATTENDANCE: C G Welchman, sales representative.

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## The John Hewson Company

106 Water St
New York, N Y
Booth 104

ON DISPLAY: operating models of electronic high speed TAKK static control systems, for which the John Hewson Company is the exclusive selling agent. These will show a safe, efficient method of controlling static electricity generated by the processing of all types of textile materials, particularly synthetics and blends.

Clinical discussions of actual static control problems will be conducted.

IN ATTENDANCE: J K Hewson, W E Krause, J F Donnelly, J Bone, D Stone and H Bradbury.

## The Hilton-Davis Chemical Co

2235 Langdon Farm Rd
Cincinnati, O
Booths 50B-50C

ON DISPLAY: naphthols; fast color bases; fast color salts; Spectrolenes; acid dyes; basic dyes and optical bleaches.

The background for the booth will represent the outer spaces of the universe with a bright star flashing on, along with the slogan "A New Star Is Born", and with two flashing dotted lines from the star racing down through the sky to connect up with a large plastic prism projecting from the backdrop.

From the prism will flow a drape in the colors of the spectrum which has been printed with Spectrolenes. Flood lights are thrown on the drape illuminating large dimensional letters of the word "Spectrolenes" which is superimposed on the drape.

To the right of the drape and on the backdrop, another caption flashes on, "Other Stars of Hilton-Davis", and under this heading the following flash on in brilliant lights: Naphthols, Fast Color Bases, Fast Color Salts, Acid Dyes, Basic Dyes, Optical Bleaches.

The booth will be colorful with the intermittent flashing lights operating in sequence, starting out with the star.

The Spectrolenes are Hiltonil Fast Color Bases which have been completely diazotized and then stabilized in such a manner as to prohibit coupling with naphthols in solution or naphtholated material until the stabilizer is broken down. The base is released from the stabilizer by the action of acid or acidified steam, such as an acid ager, allowing complete coupling of the naphthol with the fast color base.

IN ATTENDANCE: *Representing Hilton-Davis*—N S Knaggs, vice president in charge of sales; G N Nickles and A S Davis, Textile Dyestuff Division. *Representing Blackman-Uhler Co, Inc, Southern representatives of Hilton-Davis in the textile field*—P C Blackman, owner and manager; W B Uhler, owner and manager; E R Roper and C H Ratterree, Jr, technical sales. *Representing Claflin-Dorman Company, New England representatives:* K L Dorman, owner and manager.

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## E F Houghton & Co

303 W Lehigh Ave
Philadelphia, Pa
Booths 43-45

ON DISPLAY: the Company's complete line of synthetic detergents and wetting agents. Included in this line are several new detergents developed for spe-

cial purposes as well as the general line. A new rayon size in the Houghto-Size series will also be featured. The general line of processing oils for wool, cotton and synthetics will be shown.

IN ATTENDANCE: C B Kinney, manager, textile sales; H B Walker, manager of product development; O R Kerst, sales manager, Eastern Division—North; J R Clendenning, sales manager, Eastern Division—South; O H McClay and H E Peterson, sales representatives.

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## Instrument Development Laboratories, Inc

163 Highland Ave
Needham Heights, Mass
Booth 3

ON DISPLAY: Color-Eye color measuring instrument for production control of color in textile processing; special accessories for use with equipment; demonstration of applications.

IN ATTENDANCE: A R MacDonald, sales representative.

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## Interchemical Corporation Textile Colors Division

Hawthorne, N J
Booth 47

ON DISPLAY: Aridye Pigment Colors for printing and dyeing textiles; Interchem Dyes for dyeing and printing acetate, rayon, nylon and other materials; Arigen dyes for printing cotton and other fabrics; Interchem Copper-8 Dispersion, a mildewproofing compound.

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## Italviscosa

14-16 Via Borgonuovo
Milan, Italy
Booth 69

ON DISPLAY: samples of Italviscosa's various yarns and fibers as well as a number of samples of finished fabrics made with them in Italy.

IN ATTENDANCE: Angelo Donini and Gino Mondini, Milan office; J John Lawler, New York representative; Frank Perutz, New York office.

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## Kelco Company

31 Nassau St
New York, N Y
Booth 32

ON DISPLAY: fabrics that have been printed with Keltex as a thickening agent. These will include:

a. Rapidogens and Indigosols on cotton, rayon and linen and cotton-rayon mixtures.

b. direct colors on cotton, rayon, nylon and cotton-rayon mixtures.

c. vat colors on cotton, rayon and cotton-rayon mixtures.

d. acid colors on silk.

e. acetate colors on acetate.

f. white discharge on rayon.

IN ATTENDANCE: I L Blanchard, Frank Habersberger, William Naef, George Nichols, A K Saisselin and J J Sullivan.

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## Macbeth Corporation

P O Box 950
Newburgh, N Y
Booth 100

ON DISPLAY: Macbeth Model A Laboratory pH Meter; Macbeth Model T Titration-pH Meter; Macbeth Model I Industrial pH Meter; Macbeth Color Matching Skylight; and the Macbeth-Ansco Color Densitometer.

The Model I has two electrode stations with a switching arrangement for monitoring deverse tanks or flow lines. A relay system or recorder controller may be used with this instrument for automatic or semiautomatic pH process control.

The color densitometer measures the color through narrow pass band isolating filters of opaque and transparent solids as well as liquids.

The Color Matching Skylight is said to provide the finest duplication of North Sky daylight for visual color matching available. A second quality of illumination called horizon sunlight is also provided. A visual color match under both the North Sky daylight and Horizon sunlight qualities of illumination reportedly insures a color match under all lighting conditions.

The exhibit will be designed to indicate the application of Macbeth equipment to problems encountered in pH indication and control as well as visual and instrumental color measurement and evaluation.

IN ATTENDANCE: Norman Macbeth, president; Warren B Reese and John L Ayer, sales engineers.

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## Monsanto Chemical Company Merrimac Division

Everett Sta, Boston, Mass
Booths 110-111

ON DISPLAY: an exhibit pitched around resin chemistry for finishing, featuring Resloom, Merlon, Catalyst AC and Syton.

IN ATTENDANCE: C L Jones, manager of textile sales; M J Scott, textile research; Edmund Greene, advertising manager; other personnel from the Sales, Development and Research Departments.

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## Morrison Machine Co

1171-1225 Madison Ave
Paterson, N J
Booths 50D-50E

ON DISPLAY: High Pressure Laboratory Williams Unit providing for 50# steam pressure and specially designed for hot-oil dyeing; cloth display comprised of a wide assortment of fabric samples dyed by the new (hot-oil) process.

IN ATTENDANCE: J L Morrison, president; J R Morrison and J C Morrison, vice presidents; John Kreeft, chief engineer; A V Caporossi, sales engineer; Harold Lacey, superintendent; C W Curts, advertising manager.

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## National Aniline Division Allied Chemical & Dye Corporation

40 Rector St
New York, N Y
Booths 98-99

ON DISPLAY: dyestuffs and detergents.

A special feature of this display will be the M C D Crawford collection of prehistoric dyeings by the Incas and Aztecs, some dating as far back as 800 B C, contrasted with exclusive and outstanding modern prints by some of the largest U S manufacturers in addition to a distinctive and unusual type on Nacconal NR presentation which will also be on display.

IN ATTENDANCE: C C Knights, R F Holoch, A J Anderson, L H Winnell, W Ferrazano, C H Ludders and R Hoffman, New York; Dr O M Morgan, manager, detergent sales, New York; R Robertson, Philadelphia; E J Allard, Providence; A E Sampson, Boston; E W Camp, Chicago; W Barker, Charlotte.

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## National Milling & Chemical Co

4601 Nixon Street
Philadelphia, Pa
Booth 107

ON DISPLAY: industrial soaps, detergent and penetrants.

IN ATTENDANCE: L M Rosenberger, John J Tomalino and W Russell Harris.

## National Starch Products Inc

270 Madison Ave
New York, N Y
Booth 82

ON DISPLAY: a simulated outdoor billboard, prominently displaying a blow-up of the company's new moppet-type trade character; various materials processed with National Starch products. Featured products will include Nufilm, Ambertex, Amberflo and Clearfilm.

IN ATTENDANCE: D Pascal, vice president in charge of sales; J F Fitzgerald, manager in charge of starch sales; H C Olsen; W H Stone; I L Dowdee; E J Maslanka and H M Smith.

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## Nopco Chemical Company

Harrison, N J
Booths 4-5

ON DISPLAY: antistatic chemicals for processing natural and synthetic fibers.

IN ATTENDANCE: Walter B Morehouse, manager, Textile Specialties Division; Walter E Brewer, Eastern District sales manager; L E Rossiter, New England District sales manager; Travis V Rankin, Central District sales manager; C E Elphick, New Jersey technical representative; William J Gavin, New England technical representative; Dan S Rion, Southern technical representative; Bert Macintyre, North Carolina technical representative; Al M Hartley, Phila-Del-Md technical representative.

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## North American Rayon Corp

New York, N Y
Booths 55-56

(See American Bemberg).

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## Nuodex Products Co, Inc

Elizabeth, N J
Booth 13

ON DISPLAY: the complete line of Nuodex Textile Fungicides, which reportedly meet every major government specification for textile fibers and fabrics requiring mildew or rot resistance. A list of specifications involving the bulk of current procurement will be shown together with the specific Nuodex fungicide required. In addition, prominent display will be given to an abstract of government specifications compiled by Nuodex containing over 90 specifications and details about each. This abstract and its revision will be offered free to the trade.

IN ATTENDANCE: Arthur Minich, vice president of research & development; Harold M Johnson, vice president of sales; Milton Goll, chief, Microbiological Laboratories.

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## Onyx Oil & Chemical Co

Warren and Morris Sts
Jersey City, N J
Booth 95

ON DISPLAY: crush-proof finish resins. Emphasis will be placed on the characteristics of hand, ease of solubility, aging stability, and good storage stability of Onyx products.

IN ATTENDANCE: Leon F Brick, vice president in charge of sales; Albert R Jenny, sales manager; Alexander C Mackey; director of Industrial Division; Emil W Peters, director of Hosiery Division; Philip E MacLean, New England sales manager; R Allan Watson and J Walter Huber, Philadelphia representatives; Malcolm P Coulman and John E Trezise, New England representatives; William S Trezise, New York representative; Clifford R Smith Southern representative.

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## Owens Corning Fiberglas Corp

16 E 56th St
New York, N Y
Booths 61-62

ON DISPLAY: Fiberglas decorative fabrics. The finishing, printing and dyeing of these fabrics will be featured.

IN ATTENDANCE: W F Colton, mgr, Decorative Textile Division; H E Mahler, mgr, Weavers Sales & Service Division; R S Caroselli.

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## Pharma Chemical Corporation

175 Fifth Ave
New York, N Y
Booth 26

ON DISPLAY: dyestuffs and intermediates.

IN ATTENDANCE: Dr Eugene A Markush, I Matthew Buchholtz, John J Schwager, Oscar K Schwarz, Julius Miller.

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## Rayon and Synthetic Textiles

303 Fifth Ave
New York, N Y
Booth 53

ON DISPLAY: trade publication.

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## Richmond Oil, Soap & Chemical Co

1041-1043 Frankford Ave
Philadelphia, Pa
Booth 101

ON DISPLAY: textile specialties, featuring Ronyl Duller S (emulsion duller for nylon), Scour Bleach #2 (for synthetic fibers; combination scour and bleach), Richonic #33 (for worsteds, a new nonionic scour), and Rosopen #100 (a new penetrant).

IN ATTENDANCE: William Alkus, vice president; Morton W Levi, chemical engineer; Henry M Rubin and William Kamarek, salesmen; John W Schenkel, technical service; and George Kantner, chemist.

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## Rohm & Haas Company

West Washington Square
Philadelphia, Pa
Booths 114-115

ON DISPLAY: Triton X100, which according to the manufacturer, speeds each step in processing from gray to finish including desizing, scouring, bleaching, and dyeing; and Rhomite R1, a compound for making fabrics crush resistant.

IN ATTENDANCE: C M Clevenger, A K Haynes, J M Schandler, R G Thomas.

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## Royce Chemical Company

Carlton Hill, N J
Booth 79

ON DISPLAY: samples of various Royce products, featuring especially the desizing enzymes, both low and high temperature; Neozyme and Neozyme HT, both in powder form; and the liquid enzymes, Neozyme L and Neozyme L Conc.

A guessing competition, similar to the one held last year at Portsmouth, will be an extra-curricular feature of the exhibit, but this time there will be three prizes.

Roxanne, of television and magazine cover fame, who is featured regularly in Royce advertising, will be present to assist those competing in filling out their entry forms.

IN ATTENDANCE: H C Royce, vice president; R S Griffith, secretary; P J Wood, technical director; R L Jones, sales manager; I J Royce, A Finley, W Brown, W E Fayssoux, A J Berube and C W Holweger, salesmen.

## Sandoz Chemical Works, Inc

61-63 Van Dam St
New York, N Y
Booths 20-21

ON DISPLAY: fabrics made from both natural and synthetic fibers dyed and finished with Sandoz products.

Items to be displayed which have been developed in the past year will include Velanol NB and its use in the dyeing of Dacron and Sandapan TFL, an entirely new surface-active agent.

IN ATTENDANCE: C H A Schmitt, R A Lindenmaier, Walter E Taylor, Herman L Schwarz, Frank J Casey, Alfred Carbone, Charles Saalfrank, Clifford Worthen, and Henry Rollins.

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## Sarco Company, Inc

Empire State Bldg
New York, N Y
Booth 50A

ON DISPLAY: indicating temperature controllers for dyeing and wet-finishing processes; temperature control for dryers; draining and air venting equipment for drying cans.

IN ATTENDANCE: A Milnes, director; J Thompson, assistant industrial sales manager; D Roland, industrial sales representative, N Y; M J Marion, advertising manager.

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## Scholler Brothers, Inc

Collins and Westmoreland Sts
Philadelphia, Pa
Booths 1-2

ON DISPLAY: samples of various textile soaps, softeners and finishes, together with various fabrics processed with same. "Dura Beau" hosiery finishes and the "Schollerize Process for Wool Shrinkage Control" will be featured.

IN ATTENDANCE: E S Atkinson, L M Boyd, J F Noble, C H Schepmoes, W A Daniel and William Jackson.

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## Seydel-Woolley & Company

748 Rice St, NW
Atlanta, Ga
Booth 105

ON DISPLAY: Seyco finishing materials; wet processing auxiliary chemicals; samples of fabrics finished or processed with Seyco products.

IN ATTENDANCE: Paul Seydel, vice president; David Meriwether, manager of technical sales, Finishing Division; Carl Blumenstein, chief chemist.

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## Alexander Smith, Inc

Saw Mill River Rd
Yonkers, N Y
Booth 78

ON DISPLAY: applications of the Textralizing and Harristrip processes. The Textralizing method is employed to impart permanent crimp to fibers on a commercial basis, while the Harristrip process is used for stripping color from dyed wool without damage to essential fiber properties. The Textralizing unit has been developed in the past year.

IN ATTENDANCE: Dr Ernst Wolff, manager, Industrial Process Division; E Mersereau, supervisor, chemical research; George Vescio, chemical engineer.

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## Smith, Drum & Company

432 West Allegheny Ave
Philadelphia, Pa
Booths 112-113

ON DISPLAY: dyeing and finishing equipment.

IN ATTENDANCE: Harry S Drum, president; Robert N Smith and John Patton, vice presidents; Albert P March, and William C Dodson. The firm of Parrott & Ballentine will also be represented.

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## Socony-Vacuum Oil Company, Inc

26 Broadway
New York, N Y
Booths 120-121

ON DISPLAY: S/V Fabrisecs (textile wax emulsions), which have been used for some years as straight water repellents, and more recently, in combination with various mildewproofers, to give an aqueous-phase treatment for webbing and broad-woven goods.

Socony-Vacuum's "engineering approach" to textile problems will be featured, involving an analysis of the problem, preparation of an engineering report, and continuing field and laboratory service.

Visitors will have the opportunity to estimate the amount of wax on a piece of material treated with one of the S/V Fabrisecs, the best guess bringing a prize.

IN ATTENDANCE: Warren A Beman and field personnel.

## South Florida Test Service

4201 Northwest Seventh St
Miami, Fla
Booth 102

ON DISPLAY: large hand-colored photographs of SFTS' exposure facilities; test samples on exposure at their inland proving grounds and salt atmospheric base; and instrumentation for measuring and recording solar radiation, both direct and under glass. In addition there will be a continuous showing of color slides depicting all phases of the company's service.

IN ATTENDANCE: Earl M DeNoon, technical director and owner, and Warren Smith, chemical engineer.

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## Standard Fabricators, Inc

355 Walton Ave
New York, N Y
Booth 92

ON DISPLAY: late developments in the extracting and drying of cotton yarn in package form. Standard Fabricators states that they will dry any package submitted within one hour.

IN ATTENDANCE: Messrs Carnoy, Kreis, Stevens and Haag.

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## Ten-Co Machine Co

131 Oliver St
Paterson, N J
Booth 88

ON DISPLAY: miniature working model of the company's Tensionless-Continuous Dye Beck; stainless steel dyehouse truck; stainless steel dolly. Tensionless-continuous dyeing will be featured.

IN ATTENDANCE: Roger Horelbeke, general works manager.

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## Tennessee Eastman Company

10 E 40th St
New York, N Y
Booths 96-97

ON DISPLAY: the new Eastman GLF series, acetate colors which reportedly possess excellent gas- and light-fastness. The importance of these dyes in expanding the usefulness and practicability of acetate fabrics will be demonstrated by exhibiting quantities of such fabrics woven from Eastman Estron acetate yarn and staple fiber.

IN ATTENDANCE: *A M Tenney Associates*—Garry King, William Cummins

and Frank Ruddock, sales representatives. *Tennessee Eastman Company*—Carl Rutherford, assistant manager, Chemical Sales Division; F L Bume, manager, Lodi Dye Sales Office; Duncan G Carmichael, dye technical services.

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### Union Carbide and Carbon Corporation
### Carbide and Carbon Chemicals Company
### Textile Fibers Dept

30 E 42nd St
New York, N Y
Booth 70

ON DISPLAY: dynel in all forms, dyed and finished; new fabrics, both 100% dynel and many blends; new dyeing and finishing techniques.

IN ATTENDANCE: J E Burke, R W Gaines, F C King, T P Mulligan, H S Porter and A L Snyder, development engineers.

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### Textile Age Inc

22 West Putnam Ave
Greenwich, Conn
Booth 19

ON DISPLAY: trade publication.

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### Textile Bulletin

Charlotte, N C
Booth 52

ON DISPLAY: trade publication.

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### Textile Industries

806 Peachtree St, NE
Atlanta, Ga
Booths 38-39

ON DISPLAY: trade publication.

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### Textile World

330 W 42nd St
New York, N Y
Booths 105 & 119

ON DISPLAY: trade publication.

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### United States Testing Company

1415 Park Ave
Hoboken, N J
Booth 46

ON DISPLAY: AATCC Flammability Tester; AATCC Gas Fading Chamber; samples of the company's line of fugitive tints; details of testing mothproofing compounds. Information concerning the use of radioactive isotopes in evaluating dyestuffs will be available.

IN ATTENDANCE: Cameron Baker, Arthur Kellner and Paul Vomvouras.

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### Venango Engineering Co, Inc

G and Lycoming Sts
Philadelphia, Pa
Booth 125

ON DISPLAY: textile dyeing machinery; high-temperature dyeings of synthetic fibers, cotton, wool packages and rawstock.

IN ATTENDANCE: C Harry McCandless, sales manager, and A Robertson.

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### Virginia-Carolina Chemical Co

Richmond, Va
Booth 66

ON DISPLAY: Vicara, "the fiber that improves the blend", with special emphasis on the basic qualities and characteristics of this new protein fiber. A special feature of the display will include samples of wearing apparel with Vicara in the blend.

IN ATTENDANCE: John Karrh, manager, Fiber Division; Jesse Yeates, sales manager; Lee B Whitcomb and Randall Hagner, sales representatives.

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### Virginia Smelting Company

West Norfolk, Va
Booths 117-118

ON DISPLAY: textile chemicals manufactured by Virginia Smelting and a ceramic exhibit depicting the growth of the textile industry. The ceramic exhibit has been prepared by Burr Abbott, ceramic cartoonist, who will be in person to demonstrate his skill in creating caricatures.

IN ATTENDANCE: H B Channon, manager, technical service; J G Todd, Jr, West Norfolk Office; J R Eldridge, A K Scribner, Jr and G V Rittenhouse, New York Office; T T Allan, Boston Office; W C Dever, Detroit Office; S C Soneson, Chicago Office; E H Keys, Philadelphia area; J B Johnson and H B Peterson, Southern Territories.

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### Wallerstein Company, Inc

180 Madison Ave
New York, N Y
Booths 36-37

ON DISPLAY: two large framed panels, one graphically illustrating the continuous desizing method in action, the other emphasizing the outstanding features of Rapidase for desizing. Featured products will include Rapidase for desizing cotton, rayons and mixed goods, and Serizyme for desizing acetates and acetate-rayon mixtures.

IN ATTENDANCE: J Andrew Clark, James Casserly, John C Robertson, Frank Taberski and Marie Cooney.

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### Warwick Chemical Company Division
### Sun Chemical Corporation

10-10 44th Ave
Long Island City, N Y
Booth 124

ON DISPLAY: technical data and complete information on Warwick's line of chemical specialties for the textile industry. Product information will be visually displayed according to the particular applications for which they are recommended.

IN ATTENDANCE: Ernest Nathan, president; D J Eccleston; I Hurd; H Goldstein; J Hoyt; S Y Stribling III; W Green; W Brothers; H Kennedy; A Piccotti; M M McCann; M Lane; D York.

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### Watson-Park Company

Ballardvale, Mass
Booth F

ON DISPLAY: Watson-Park's Ureaformaldehyde Restex Pastes and Syrups; Wapaco Synthetic 150; Liquid Hydraldehyde (Stripping), and the Ogden Process.

The Ogden Process, which will be featured, is a patent-applied-for process for simultaneously stripping and dyeing reworked wool. It reportedly requires no new chemicals and no new equipment with savings in time, steam, labor and strength. (A paper on this subject will be read at the technical sessions).

IN ATTENDANCE: Frederic A Prisley, director of research; Harold E Gile, chief dyestuff technician; and John F Shepard.

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### Westinghouse Electric Corp

246 East Fourth St
Mansfield, Ohio
Booths 122-123

ON DISPLAY: garments made from the same materials and by the same cutter which have been hand washed, dry-cleaned and home laundered. This will be

done in an effort to convince the textile industry that perhaps they should pay a little more consideration to labeling synthetic garments.

This exhibit will be based entirely on washing and drying of synthetics in Westinghouse automatic equipment.

IN ATTENDANCE: Jean Jeppesen, Home Economics Institute.

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### Jacques Wolf & Co

Passaic, N J
Booth 76

ON DISPLAY: chemical specialties for textile processing, including antifume agents, synthetic detergents, cation-active and other finishes, monopole and other sulfonated oils, enzymic products, hydrosulfites, dispersing agent, wetting agents, and gums—textile and imported.

IN ATTENDANCE: S E Tylee, vice president; G J Desmond, secretary; Arnold Pfister, plant superintendent; M F Costello, E J Grady, J O'Malley, G W Searell, C E Wright, C R Bruning, C I Lakey, C H Hagelgans and F L Fassnacht, salesmen; George W Apsey, Donald Hoffman, R C Braun, Lucien Sellet, R W Parks, Dr H Probst, E J Pranke, and A J Jacovino, chemists.

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### Wyandotte Chemicals Corporation

Wyandotte, Mich
Booths 90-91

ON DISPLAY: caustic soda, soda ash, bicarbonate of soda, Pluronics, Kreelon and Carbose—with special emphasis on the Pluronics (Wyandotte's new series of nonionic surfactants) and Kreelon CD (Wyandotte's newly-promoted detergent, offering alkylaryl sulfonates in textile processing applications).

IN ATTENDANCE: Dr P E Burchfield, director, Technical Service Department; W L Rippeteau, manager, Organic Chemicals Sales Department; R K Rigger, assistant manager, Organic Chemicals Sales Dept; H C Speele, director, market development.

## Panel Announced for Symposium Luncheon

LEONARD S LITTLE, Chairman of the Mixed Fibers Symposium Luncheon Committee, has announced that the following will be members of the panel of experts taking part in the symposium:

Ira Altman, Partner Cavalcade Fabrics, New York

William D Appel, Chief Textile Section, National Bureau of Standards, Washington, D C

Dr David Askemase, Member of Firm, Rose Bros, New York

Dr Ruth Ayers, Managing Director, National Consumer-Retailer Council, Washington, D C

Fred Bantz, Vice President in Charge of Merchandising, J C Penney Co, New York

Ernest H Benzing, Technical Director, Bemberg Corp, New York

Dr Frederic Bonnet, American Viscose Corp, Marcus Hook, Pa

Robert Burns, Celanese Corporation of America, New York

John N Dalton, Chemical Director, Pacific Mills, Lawrence, Mass

Julius B Goldberg, Research Director, J P Stevens & Co, New York

John Goldsmith, Vice President, Hess Goldsmith Co, New York

Otto J Haufe, Executive, Turner Halsey Co, New York

George Hotte, Technical Director, Tennessee Eastman Corp, New York

Waldemar Kuenzel, Executive Manager, Fabric Development Department, Deering Milliken & Co, Inc, New York

Dr Richard Kropf, Vice President of Research, Belding Heminway, New York

Eugene Lutz, Head of Textile Development, Burlington Mills Corp, New York

Vivian McCollom, President, Allentown Converting Co, Paterson, N J

Dr Paul L. Meunier, Manager, Sales Development, Dyestuff Division, E I du Pont de Nemours & Co, Inc, Wilmington, Del

Dr Joseph B Quig, Manager, Development, Fibers Dept, E I du Pont de Nemours & Co, Inc, Wilmington, Del

Dr E W Rugeley, Technical Director, Union Carbide and Carbon Chemical Co, New York

Dr Harold W Stiegler, Director of Research, AATCC, Lowell, Mass

Fred L Young, Consultant to Virginia Carolina Chemical Co.

J Robert Bonnar, Vice President of AATCC, will be moderator during the Symposium. He will present a general summary of the present status of mixed fibers and thereafter will call upon the panel of experts, representing all phases of the industry, from the fiber to the consumer, to answer questions in open discussion. This symposium is one of the most ambitious projects attempted at an AATCC Convention.

Harold G Hoffman

## Former Governor Hoffman to Speak at Annual Banquet

HAROLD G HOFFMAN, former Governor of New Jersey, will be the guest speaker at the Annual Banquet of the 30th National Convention to be held on Friday evening, October 19th, at the Hotel Statler, New York.

At twelve, while attending high school, Governor Hoffman started newspaper work as a suburban correspondent. At sixteen he was a police reporter, at eighteen an editor, and at twenty-one, after enlisting as a private at the outbreak of World War I, was a captain in the infantry serving north of Verdun. Returning home he became a bank official, and then, successively, a City Treasurer, Mayor, member of the New Jersey Legislature, twice a member of Congress, a State Motor Vehicle Commissioner, and became Governor of New Jersey at the age of thirty-eight. He was later Executive Director of the New Jersey Unemployment Compensation Commission. At the outbreak of World War II he became an officer in the Transportation Corps with headquarters at the New York Port of Embarkation. His duties took him overseas on several occasions. At the conclusion of the war he was awarded the Legion of Merit. Prior decorations included the Army Commendation Ribbon with two clusters, the Verdun Medal, and campaign medals for service in three theaters.

Governor Hoffman has served as Chairman of the Street and Highway Section of the National Safety Congress and was a member of its Board of Governors for ten years. He was the first President of the Interstate Baseball League and for four years served as President of the Circus Saints and Sinners of America.

Rated as one of the top speakers of the nation, Governor Hoffman has a cheery, stimulating, highly entertaining style. He combines the humorous with the serious and has remarkable adaptability and gift of repartee.

# OLNEY MEDAL

## *To Be Awarded to Raymond W. Jacoby*

THE Olney Medal will be presented to Raymond W Jacoby of Ciba Company Inc at the 30th National Convention during the Annual Banquet on October 19th at the Hotel Statler, New York. Mr Jacoby will be the eighth person to receive the award, previous winners being:

Dr Louis A Olney (1944)
Dr Milton Harris (1945)
William H Cady (1946)
Edward R Schwarz (1947)
Harold M Chase (1948)
Charles A Seibert (1949)
Dr George L Royer (1950)

Raymond W Jacoby was born on July 10, 1889 at Wilkes-Barre, Pennsylvania, the son of Harry A and Sarah Hull Jacoby. He graduated from Wilkes-Barre High School in 1906 and received a Bachelor of Science Degree in Chemical Engineering from Massachusetts Institute of Technology in 1910.

From 1910 to 1937 Mr Jacoby served with various companies in the textile finishing industry as chemical engineer, foreman, division superintendent, superintendent, assistant manager and manager. Among the companies with whom Mr Jacoby was associated were Rockland Finishing Company, United States Finishing Company and Arkwright Finishing Company. Since 1937 he has been with Ciba Company Inc serving as technician, research director, branch manager and department manager.

Mr Jacoby has presented papers before most Sections of AATCC and before all of the Sections of the Canadian Association of Textile Colourists and Chemists. He has also lectured on textiles and texitle processing at different schools and colleges including Clemson College, Brown University, University of Rhode Island, Rhode Island School of Design, Philadelphia Textile Institute and New Bedford Textile Institute. In addition he has presented papers before professional groups such as the New England Chemistry Teacher's Association and Rhode Island Society of Chemical Engineers.

Mr Jacoby has been granted the following U S Patents:

1,398,378—Cotton Product and Process for Making the Same (November 29, 1921)

1,610,786—Fabric with a Design and Process for Making Same (December 14, 1926)

1,663,845—Process for Treating Printed or Dyed Fabrics (March 27, 1928)

1,663,846 — Apparatus for Treating Printed or Dyed Fabrics (March 27, 1928)

2,431,562 — Process for Improving the Fastness of Dyed Material (November 25, 1947)

Mr Jacoby has been active in the affairs of AATCC for many years and at present is a Councilor representing the Rhode Island Section, Chairman of the Board of Editors on the Vat Monograph (No. 2), Chairman of the Rhode Island Sectional Advisory Research Committee, Member of the General Research Committee and member of various research sub-committees, Member of the Colour Index Committee and two of its subcommittees, Member of National Technical Program Committee, and a Member of the Rhode Island Intersectional Contest Committee. He is a former chairman of the Rhode Island Section and was Assistant General Chairman of the 1950 National Convention Committee. He was chairman of the Rhode Island Section Intersectional Contest Committee and presented the paper at the Atlantic City Convention in 1944 which was awarded first prize. He was also a member of, and presented the paper for, the Rhode Island Section Intersectional Contest Committee at the New York Convention in 1946 which was awarded first prize. Mr Jacoby has further served on various other

**Three Views of the Olney Medalist at His Mountain Lakes, N J Home**

Towering tomato plants attest to Mr Jacoby's skill as a weekend gardener.

The Jacobys relax on their popular sunporch.

The Medalist poses before a rock which stands formidably near the entrance of his home.

**The Olney Medal**

Rhode Island Section Intersectional Contest Committees.

Mr Jacoby is the author of numerous papers which have been published in the textile press. The following articles have appeared in the *American Dyestuff Reporter*:

"Vat Printing"—June 27, 1938

"Trends in Printing and the Use of Resins in Finishing"—March 31, 1941

"Chemicals in Relation to the War Effort"—June 22, 1942

"Meeting Changing Conditions"—April 26, 1943

"Some Aspects of Color"—June 28, 1946

"Observations of Twenty-Five Years of Textile Processing"—December 2, 1946

"Post War Textile Processing"—June 30, 1947

"The New Look in Textiles"—July 11, 1949

"Current Developments in Textile Processing"—July 10, 1950.

*Textile Age* in August, 1941 published "An Open Mind in Textile Finishing" and the following appeared in *Daily News Record*: "Printers' Ingenuity Yields New Effects" (September 14, 1950), "Printing Quality Improved by Use of New Techniques" (September 22, 1949) and "New Durable Qualities Imparted to Fabrics by Modern Finishing" (October 2, 1947). Mr Jacoby was also a contributor to *Textile World Record* and *Cotton*.

The Olney Medal will be presented to Mr Jacoby by AATCC President C Norris Rabold. Elliot Broadbent will speak on "The Medalist—The Man" and Dr W George Parks on "The Medalist—The Scientist".

* * *

The Olney Medal was endowed by the Howes Publishing Company, Inc, and is awarded by the Association at intervals of not less than a year for outstanding achievement in the field of textile chemistry, including the development of chemical agents or chemical processes used in the manufacture of textiles, or methods for their evaluation. Its purposes are to encourage and to afford public recognition of such achievements and contributions, and to be a testimonial to Dr Louis A Olney, founder of the AATCC, for his lifetime of devotion and multitudinous contributions to this field.

The election of a candidate to receive the award is by unanimous agreement of the Olney Medal Committee of five, constituted as follows: (1) the President of the Association, (2) a member of the faculty of an educational institution awarding degrees in chemistry, (3) an employee of a concern manufacturing chemical products used in textile wet processing, (4) an employee of a concern manufacturing textiles, and (5) a member at large who may be any qualified individual. All must be senior members of the Association. The present members of the Committee and their terms of office, from January, 1951, are:

(1) President C Norris Rabold
(2) Henry A Rutherford, 4 years
(3) Wyss L Barker, 1 year
(4) Harold W Leitch, 2 years
(5) William D Appel, 3 years.

The Secretary of the Association is secretary of the committee without vote. As the term of each elected member expires, the committee itself elects a successor to serve for 4 years.

—♦ ♦—

## J Spencer Love to Speak at Mixed Fibers Symposium Luncheon

J SPENCER LOVE, Chairman of the Board of Burlington Mills Corporation, will be the guest speaker at the luncheon preceding the Symposium on Mixed Fibers on Thursday, October 18th, at the 30th National Convention, Hotel Statler, New York.

Mr Love was born in Cambridge, Massachusetts, and received his B A from Harvard University in 1917. During World War I he served as a major, infantry, with the A E F and was cited by General Pershing for "exceptionally meritorious and conspicuous services".

He began his textile career in March, 1919, joining the Gastonia Cotton Manufacturing Company at Gastonia, North Carolina. The following year with his father, a former professor of mathematics at Harvard, he purchased controlling interest in a small mill in which he was working. In 1923 Mr Love sold his company's real estate very advantageously and moved the machines to Burlington, North Carolina, where, with a group of local businessmen, the first mill of the present Burlington Mills Corporation was established. He has served as chief executive of the company since its founding. He was President from 1930 to 1948 when he became Chairman of the Board. During World War II Mr Love served as head of the Textile, Clothing and Leather Goods Division of the War Production Board.

Mr Love is a former member of the Committee for Economic Development, Anglo-American Productivity Council, and the Advertising Council. He is a trustee of the Good Samaritan Hospital in Palm Beach, Florida, the First Presbyterian Church of Greensboro, North Carolina, the University of North Carolina, and Davidson College. He is a director of the New York Trust Company, New York, and the American Security and Trust Company, Washington, D C. He is further a member of the Visiting Committee of North Carolina State College and the Harvard Graduate School of Business Administration.

Burlington Mills operates 73 plants in 43 communities in 8 states and 4 foreign countries and employs 33,000 people. Its products include women's woven and knit outerwear and underwear fabrics, men's wear fabrics, decorative fabrics, cotton piece goods and yans, industrial and transportation fabrics, ribbons, and hosiery for men and women.

**J Spencer Love**

# INTERSECTIONAL CONTEST COMMITTEES

**FRANK J O'NEIL**
***Chairman, National Intersectional Contest Committee***

## National Committee

FRANK J O'NEIL, *Chairman*
*Pacific Mills*
EARLE D McCLEOD, *Secretary*
*Arnold, Hoffman & Co*
J Robert Bonnar
*General Dyestuff Corp*
Thomas R Smith
*Wiscassett Mills Company*
John M Gould
*Barre Wool Combing Company*
Kenneth A Howry
*Daily News Record*

## Judges

***Chief Justice***

WILLIAM D APPEL
*National Bureau of Standards*

**HAROLD H TUCKER**
***Judge, Representing New York Section***

**EARLE D McLEOD**
***Secretary, National Intersectional Contest Committee***

**FRED T LENSE**
***Judge, Representing Southeastern Section***

**H F CLAPHAM**
***Judge, Representing Philadelphia Section***

**JOHN M GOULD**
***Member, National Intersectional Contest Committee***

**JOE T BOHANNON**
***Judge, Representing South Central Section***

**HAROLD B STURTEVANT**
***Judge, Representing Rhode Island Section***

**GEORGE THOMSON**
***Judge, Representing Northern New England Section***

***Judges Representing Sections***

Southeastern Section:
Fred T Lense, Jr

South Central Section:
Joe T Bohannon, Jr
*American Aniline Products, Inc*

New York Section:
Harold H Tucker
*Consultant*

Philadelphia Section:
H F Clapham
*E I du Pont de Nemours & Co, Inc*

Rhode Island Section:
Harold B Sturtevant
*Rhode Island School of Design*

Piedmont Section:
Linton C Reynolds
*Riegel Development Laboratories, Inc*

Northern New England Section:
George Thomson
*Fabric Research Labs, Inc*

**ELLIOTT MORRILL**
***Judge, Representing Mid-West Section***

Mid-West Section:
Elliott Morrill
*The Best Foods, Inc*

# Sectional Committees

**J H STRADLEY**
***Chairman, Southeastern Intersectional Contest Committee***

### Southeastern Section

J H STRADLEY, *Chairman*
*E I du Pont de Nemours & Co, Inc*
J L Taylor
*Georgia Institute of Technology*
L A Burroughs
*E I du Pont de Nemours & Co, Inc*
Cecil Ray
*Pepperell Mfg Co*
F L Lense

**EUGENE W K SCHWARZ**
***Chairman, New York Intersectional Contest Committee***

**D H GUNTHER**
***Chairman, South Central Intersectional Contest Committee***

### South Central Section

D H GUNTHER, *Chairman*
*Burkart-Schier Chemical Co*
R D Blum, Jr
*May Hosiery Mills*
G W Hakanson
*Tennessee Eastman Corp*
A J Kelly
*Burkart-Schier Chemical Co*
W F Luther
*Dixie Mercerizing Co*

### New York Section

EUGENE W K SCHWARZ, *Chairman*
*Consultant*
EDMUND A LEONARD, *Secretary*
*Alexander Smith & Sons Carpet Co*
Kenneth H Barnard
*Textile Resin Dept,*
*American Cyanamid Company*
Emil C Hansen
*General Dyestuff Corporation*

**A C NUESSLE**
***Chairman, Philadelphia Intersectional Contest Committee***

John F Hagen
*Callaway Mills, Inc*
George A Slowinske
*I du Pont de Nemours & Co, Inc*
R B Smith
*N J Laundry & Cleaning Inst*
Emery I Valko
*Polytechnic Institute of Brooklyn*

## Philadelphia Section

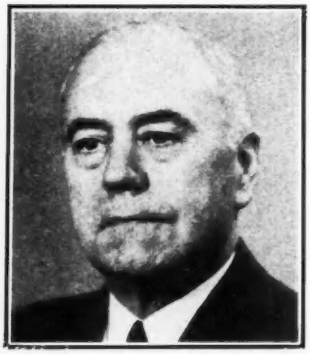
A C NUESSLE, *Chairman*
*Rohm & Haas Co, Inc*
S W Brown
*Monsanto Chemical Co*
E C Diehl
*Ankokas Dyeing & Processing Co*
R H Drukker
*Textile Resin Dept,*
*American Cyanamid Company*
A W Etchells
*Hellwig Dyeing Corp*
T R Fol·z
*Philadelphia Textile Institute*
D D Gagliardi
*Warner Chemical Co*
T H Hart
*Hart Products Corp*
L T Kelly
*John B Stetson Co*
A L Lippert
*Joseph Bancroft & Sons Co*
F B Lutz
*The Millville Mfg Co*
C J Monego
*Philadelphia Textile Institute*
A E Raimo
*John Campbell & Co, Inc*
M J Reider
*Geo W Bollman & Co*
F H Riale
*Allentown Converting Co*
T J Scanlon
*Calco Chemical Division,*
*American Cyanamid Company*
J E Smith
*E I du Pont de Nemours & Co, Inc*
R B Stehle
*Allegheny Dye Works*
P Theel
*Philadelphia Textile Institute*
F V Traut
*Globe Dye Works Co*
L I Weiner
*Philadelphia Quatermaster Depot*
J A Woodruff
*American Viscose Corporation*

## Rhode Island Section

EDWARD H GAMBLE, *Chairman*
*E I du Pont de Nemours & Co, Inc*
Edward J Allard
*National Aniline Division,*
*Allied Chemical & Dye Corp*
George M Gantz
*Lonsdale Co*

**EDWARD H GAMBLE**
***Chairman, Rhode Island***
***Intersectional Contest***
***Committee***

Thorwald Larson
*Carbic Color & Chemical Co, Inc*
Arthur C Merrill
*Arnold, Hoffman & Co, Inc*
Raymond B Taylorson
*General Dyestuff Corporation*
Fred R Tripp
*Mt Hope Finishing Co*
George Wood
*Apponaug Co*
William H Cady
Boris Frankfurt
*Glenlyon Print Works*
Raymond W Jacoby
*Ciba Company, Inc*
Edward W Lawrence
*Cranston Print Works Company*
W George Parks
*University of Rhode Island*
John W Timperley
*Kenyon Piece Dyeworks, Inc*
David Hardman
*Providence D B & C Co*
Richard H Lewis
*Providence D B & C Co*



**HARLEY Y JENNINGS**
***Chairman, Piedmont***
***Intersectional Contest***
***Committee***

## Piedmont Section

HARLEY Y JENNINGS, *Chairman*
*Dan River Mills*
Robert A Bruce
*Amalgamated Chemical Corp*
Roland Z Farkas
*Texize Chemicals, Inc*
Joseph O King
*Fairforest Co*
Joseph Lindsay, Jr
*Clemson College*
R G Lawrence
*Rohm & Haas Co, Inc*
M M McCann
*Warwick Chemical Co*
John B Neely
*Burlington Mills Corp*
Linton C Reynolds
*Riegel Development Labs, Inc*
R Hobart Souther
*Cone Mills Corp*
Henry A Rutherford
*North Carolina State College*

## Northern New England Section

JOHN H SKINKLE, *Chairman*
*Lowell Textile Institute*
Elmer Fickett
*Lowell Textile Institute*
E R Kaswell
*Fabric Research Labs, Inc*
Frank J O'Neil
*Pacific Mills*
Fred Shippee
*Lowell Textile Institute*

***ALL TECHNICAL PAPERS WILL APPEAR IN THE PROCEEDINGS***

# *Abstracts*

# OF TECHNICAL PAPERS

## To Be Presented at 30th National Convention

### INTERSECTIONAL CONTEST PAPERS

### "The Measurement of Fabric Soiling"

NEW YORK SECTION

The history of publications and projects on measurement of fabric soiling is reviewed. From this history the known facts on mechanisms of fabric soiling and soil retention are summarized. Three test methods standardized by the Committee are described and examples of their applications illustrated. The test methods are designed to evaluate in a controlled way the various mechanisms by which soil may impinge upon textiles. The examples used for illustrative purposes demonstrate the importance in soil retention of fabric construction, type of fiber and type of finish.

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### "The Effect of Mechanical Agitation on Rate of Dyeing"

NORTHERN NEW ENGLAND SECTION

(Prepared by Fred Shippee and Prof John H Skinkle)

Previous workers have shown that the amount and type of agitation used in a dyebath affects the rate and extent of dye absorption. In this paper, one aspect of the effect of agitation is examined and it is shown that both work and energy affect different periods of the dyeing time.

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### "Some Variables in Improving the Crease Recovery of Cotton Fabrics with Synthetic Resins"

PHILADELPHIA SECTION

Starting with a comparison of various resin types on two cotton fabrics, this investigation was gradually extended to cover the effect of catalysis and curing conditions, pre- and after-mercerization, and stiffening and softening agents, on a variety of fabrics. Because of the large number of variables, only the one desired factor (crease resistance) and a major adverse factor (tear strength) were measured. Test methods included the TBL and Monsanto crease recovery tests and the trapezoid, Elmendorf and tongue tear tests.

Fabric construction was found to be of primary importance; in most cases the strongest fabric after resin treatment was the one which had been strongest originally, but there were exceptions to this rule. Resins differed considerably in efficiency on a concentration basis; but in the more important comparison of crease recovery versus tear strength, surprisingly little difference was found between the various monomeric (diffusible) types. Surface resins (nondiffusible) did not impart crease recovery.

Catalysts, similarly, varied more in efficiency than they did in improving the tear strength at a given crease recovery level. Curing conditions were not critical over the range studied. Pre-mercerization had only slight effect; while after-mercerization reduced the recovery and increased the tear at roughly a proportionate rate, if the fabric was not allowed to shrink.

Stiffening agents tended to reduce either crease recovery or tear, or both, but a small amount of stiffener could in some cases be tolerated. Softeners tended to improve both crease recovery and tear strength, although the effect varied widely with both fabric construction and type of tearing force. Some important differences between tear tests were uncovered.

It is hoped that the study, which for the most part was extensive rather than intensive, will dispel some of the mystery and misunderstanding surrounding the creaseproofing of cotton; will serve as a guide for those intending to process cotton fabrics with synthetic resins; and will indicate the paths along which further investigation is likely to be worthwhile.

### "The Continuous Dyeing of New Synthetic Fibers"

RHODE ISLAND SECTION

The objective of this investigation was to develop continuous dyeing methods for fabrics composed of the new synthetic fibers, namely: Dacron, Orlon, Acrilan and Dynel. Two possibilities were considered:

(1) The conversion of established non-continuous processes into continuous ones.

(2) The development of new processes.

The application of the following classes of dyes was studied:

Acetate dyes with and without carriers.

Acid dyes with and without pretreatments and carriers.

Premetalized dyes with and without pretreatments and carriers.

Vat dyes by pigment, reduced and vat acid methods.

Leuco esters of vats with and without cuprous ion pretreatment.

A study of the influence of heat was made on the foregoing.

Preliminary experiments showed promising results with vat dyes and their leuco esters. Since fabrics so dyed had superior light and wash fastness, most of the subsequent work was devoted to these classes of dyes. As this study progressed, several original and practical processes were developed. Successful plant trials were made by the following methods:

(1) A modified method of applying the leuco esters of vat dyes.

(2) The continuous application of cuprous ion on acrylic fibers.

(3) The application of the leuco esters of vat dyes on acrylic fibers in conjunction with cuprous ion.

(4) The application of vat dyes to acrylic and polyester fibers.

(5) A surface-stripping process which improved the crock fastness of vat dyeings.

It was found from this study that selected vat dyes and their leuco esters could be utilized for the practical dyeing of fabrics composed of polyester and acrylic fibers.

## "Toward a Simple Mechanical Means of Judging Hand"

SOUTH CENTRAL SECTION

As the title suggests, this is a study to find a mechanical means of judging the hand of very soft fabrics. A survey of several mills indicated that the manual method was almost universally employed because present mechanical means did not show up small differences in hand of very soft fabrics. Although there probably never will be a substitute for the knowing touch of the experienced finisher, a mechanical aid would facilitate his work. Several devices, many of them novel, were constructed and evaluated. One method in particular, described as the "ring method" has considerable promise and briefly consists of pulling a specific swatch through a poteye of certain specifications while at the same time measuring the maximum tension registered required. In an attempt to test yarns as well as fabrics, an apparatus was developed that compares the bending modulus of yarns; the device, which is described in detail, should be a real contribution to the field of testing yarns.

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## "A Study of the Effects of Fabric Construction and Mercerization on the Light- and Wash-Fastness of Vat Dyes"

SOUTHEASTERN SECTION

An investigation of the possible effects of fabric construction and preparation on the light- and wash-fastness characteristics of vat-dyed fabrics has been conducted. Commercial fabrics of the same fiber composition, varying in fabric weight and construction, were used and were dyed with selected vat dyes that could be expected to show from poor to very good fastness to light and/or washing. The dyeings were conducted according to standard commercial procedure with and without mercerizing. The fastness characteristics were determined by standard procedure supplemented by microscopic studies. Although it is probably not possible to generalize from the few cases reported, the following results have been noted for the samples studied and the dyeing procedure employed.

1. The construction of a fabric is markedly influential in the penetration and depth of shade in a standard dyeing procedure.

2. Mercerization improves penetration and depth of shade for a given fabric in a standard dyeing procedure.

3. Light fastness is a characteristic of the dyestuff itself and is apparently unaffected by fabric construction or previous mercerization.

## PRINTING GROUP MEETING

## "The Mechanics of Textile Printing"

DONALD C McGIEHAN
*Rice Barton Corporation*

The paper will deal with many of the problems involved in printing, stressing the mechanics as they might affect application of colors and results. The construction of printing machines and reasons for various practices in printing different cloths will be discussed. New developments in printing machine construction will also be covered.

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## "Some Observations in Textile Printing"

OTTO F HABEL
*General Dyestuff Corporation, New York*

This paper reviews past and present developments in the textile printing field with particular emphasis on vat color and resist printing. It gives a brief account of past and present developments in the textile field in the light of future significance. Particular emphasis is given to resist printing and also the printing of vat colors by the so-called "flash or chemical pad principle" in both machine and screen printing. Possibilities of obtaining satisfactory fixation during a shorter aging time than employed today are discussed in detail. The conclusion is drawn that resist printing as well as the printing of vat colors by the chemical pad process in both machine and screen printing will find wider application in this country.

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## "Effect of Emulsion Stability on the Range of Color Values Obtained from Pigment Printing Media"

HOWARD C WOODRUFF
*Chemical Division, General Electric Company, Schenectady, New York*

The use of alkyd resin water-in-oil emulsions for textile print work requires careful control of conditions. Variations in the color value yield from the pigments used is often observed in practice. This variation has been attributed to alterations in emulsion stability: emulsions of low stability yielding high color values, emulsions of high stability yielding low color values. A technique for getting quantitative data on emulsion stability and emulsion change has been developed. The method is useful both as a research technique and for industrial control. Data on emulsion stability are correlated with spectrophotometric measurements on the color value of prints obtained from various types of pigmented emulsions. Numerical results are given, correlations shown and interpretations discussed. Optimum color value and minimum variations between color prints can be achieved by regulating emulsion stability within definite control limits. This work opens the quantitative approach in the textile printing field.

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## "The Use of Resinous-Copper Complexes in Printing"

ALBERT P ROYLE
*Sandoz Chemical Works, Inc, New York*

This paper concerns itself with both the discharging and the application printing of those direct colors which may be benefitted by an aftertreatment with a resinous-copper complex. Processing problems are discussed and methods are suggested by means of which clear whites and prints with excellent fastness properties are obtained.

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## DYEING GROUP MEETING

## "Attachment of Dyes to Cotton by Ether Linkage"

DR JOHN D GUTHRIE
*Cotton Chemical Processing Division, Southern Regional Research Laboratory, New Orleans, Louisiana*

A method is described for coloring cotton by attaching certain azo dyes to the cellulose by ether linkage. Cotton fabrics colored by this process have outstanding wash fastness. While the light fastness of colors so dyed is only fair, it is equal to or better than cotton fabrics dyed with commercially developed azo colors. Preparation of dyes especially suited to this method of application is described.

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## "Textile Fibers from Synthetic Resins"

DR GEORGE M GANTZ
*Research Director, Lonsdale Company, Lonsdale, Rhode Island*

The chemical and physical properties of textile fibers manufactured from synthetic resins are related to their dyeing characteristics. Dynel, Orlon, Dacron and Chemstrand are analyzed in detail. Physical properties of the synthetic resin fibers are compared with those of natural fibers including particularly tenacity, elongation,

stiffness, elasticity, density, and moisture regain. Stress-strain curves are used to illustrate similarities and differences among the fibers. It is shown from the chemical and physical properties of the synthetic resin fibers that they are difficult to dye by methods normally used for cotton, wool and rayon. Special techniques involving high temperatures, swelling agents and coupling agents have been found to greatly increase dye affinity, but much more work must be done before these fibers can be dyed with fastness qualities equal to their inherent durability.

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## "The Copper Method for Dyeing Orlon Fiber"

DR R H BLAKER and DR J F LAUCIUS

*Technical Laboratory, E I du Pont de Nemours & Co, Inc, Wilmington, Delaware*

Copper salts have been studied as assistants in dyeing Orlon acrylic fiber. These studies have led to the development of a satisfactory dyeing procedure for polyacrylonitrile fibers in general. This process requires formation of a cuprous salt of an acid dye within the fiber. Cuprous ion is first absorbed by Orlon fiber and forms bonds with certain nitrile groups. A dye and ion then forms a salt with one of the cuprous ions thus bound. The absorption of cuprous ion by Orlon fiber and the absorption of acid dye by the coppered fiber can be represented by simple equations. In practice, cuprous ion is formed in the dye bath by reduction of copper salts. Hydroxylamine sulfate has proven to be a satisfactory reducing agent and avoids the usual tendency of cuprous ion to absorb metallic copper and cupric ion. Temperature, pH of dyebath and concentration of cuprous ion have a pronounced effect on the rate of dyeing.

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## "Ogden Process"

F A PRISLEY

*Director of Research, Watson Park Company, Ballardvale, Massachusetts*

The Ogden Process is a procedure which may be used for stripping and dyeing woolen materials simultaneously. It has been found that under suitable conditions satisfactory results may be obtained by dyeing and stripping reused and reworked materials in one bath. The present procedure consists of stripping followed by a wash and often by neutralizing in a new bath. The goods are then redyed in a fresh bath. The Ogden Process may be used to eliminate one, and in some cases two, of these three baths.

## "The Standfast Process of Dyeing"

FRANCIS S RICHARDSON

*Waldrich Company, Delawanna, New Jersey*

The use of molten metal in some form in the textile field will be briefly reviewed. The background of the Standfast process will be presented with some reference to the organization itself and the personnel involved. A brief resume of the process will be given with remarks about various adaptations other than applying vat colors. A review of known results and some ideas as to its future role will be presented.

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# AUXILIARIES AND TESTING GROUP MEETING

## "A New Engineering Approach to Woolen Fiber Lubrication"

PAUL J MARTIN

*Socony Vacuum Oil Co, Boston, Massachusetts*

Within the past year and a half, an approach to the proper use of wool oils which is completely new in its comprehensiveness, attention to detail, and mode of attack has been successfully employed in woolen mills throughout the country. This system of technical service embraces all phases of woolen mill processing which are affected by, or which affect, woolen fiber lubricants. Particular attention is paid to the oil content and the moisture content of the stock from the picker house through the finishing department. Determination of these data is speeded through the use of a modern moisture meter recently adapted to woolen mill requirements. Usage of this equipment eliminates tedious laboratory methods of determining moisture regain and makes it possible to run these evaluations in a matter of seconds. A survey embracing all important aspects of wool oil application is presented to responsible personnel in the form of an Engineering Report. This report then forms a permanent record for the mill's file.

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## "Quantitative Data on the Adsorption of a Detergent by Cotton Sheeting Under Textile Processing Conditions"

L H FLETT, L F HOYT and J WALTER

*National Aniline Division, Allied Chemical & Dye Corporation, New York*

Synthetic detergents have generally replaced other less active surface active agents in cotton processing operations, such as kier boiling or open boil-off, chlorine or peroxide bleaching, dyeing, washing of naphthol or vat dye prints and other washing operations. Although it was known that detergents and other surface active agents were effective because they were adsorbed, it has not been possible until recently to determine the amount actually adsorbed on the textile surfaces. Improved analytical procedures capable of assaying minute quantities of anionic detergents have made it possible to study both the amount of Nacconol adsorbed from solution by textile fibers and the factors that govern that adsorption. It has been demonstrated that the adsorption increases rapidly with the increasing concentration up to a concentration of 0.2% on the pure organic basis. Raising the temperature increases the rate of adsorption. For all practical purposes, the adsorption increased with time, but it does appear to reach a maximum for any fiber, which is dependent on the concentration of the detergent in solution. The amount adsorbed from solution varies with the textile fiber; in the case of cotton, the adsorption is relatively low compared with silk and wool. Nevertheless, if processes are run under the most favorable conditions for adsorption, 0.3% of pure organic sulfonate, based on the weight of the cotton, may be adsorbed. Since the amount of detergent used is small and since the weight of the cotton processed is relatively very large, there may be a substantial withdrawal which must be allowed for in calculating economical and efficient operating concentrations. For some purposes, it is desirable to have adsorbed detergent that will be effective in subsequent operations where it washes readily from the fibers. Where adsorbed detergent is not desired, processes should be operated to minimize it.

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## "Recent Advances in Wetting and Rewetting Test Methods"

DR LEONARD SHAPIRO

*Synthron, Inc, Ashton, Rhode Island*

The most frequently used tests are the "sinking tests", especially the loaded tape and skein methods which are excellent for rapid laboratory testing. These measure time for only one degree of wetting, however. For complete evaluation, a "rate-of-wetting" curve is important, and the hydrometer method is the simplest. Several hydrometer designs are discussed. Factors affecting correlation of the hydrometer "rate-of-wetting" tests with the other methods are discussed. Rewetting tests by the loaded tape method are described. Rewetting speeds improve considerably with increasing pad temperature and increasing immersion time. Drying conditions are also important.

## "Sequestering Agents in Textile Processing"

DR JOHN J SINGER and
DR FREDERICK C BERSWORTH
*Bersworth Chemical Company, Framingham, Massachusetts*

The paper will describe briefly the chemistry involved when metallic ions react with organic complexing agents. The use of Versene (ethylene diamine tetra acetic acid sodium salts), Versene Fe-3, Versene Fe-3 Specific and Versene T by the textile processing industry will be described in detail. Among the uses described will be the effects of sequestering agents on wool during the scouring process, the prevention and removal of iron stains from cottons during the mercerizing or kier boil or caustic treatment, the use of organic complexing agents to stabilize peroxide bleach solutions and to prevent iron and hard water salt precipitation in hypochlorite bleaches. The effects of metal impurities in dye baths and their inactivation through the use of organic complexing agents will be discussed in detail.

## "Skin Irritation Tests for the Textile Industry"

DR LOUIS C BARAIL
*United States Testing Company, Hoboken, New Jersey*

This paper is a discussion of the methods used for testing fabrics, dyes, finishes, and other chemicals used in the textile industry for the presence of primary skin irritants and cutaneous sensitizers. The methods are compared for accuracy, reproducibility, time required to obtain results, and costs. The author's comments are based on results obtained with these methods on the same fabrics and chemicals for a great many years. Over one thousand textile chemicals were tested *per se* or on fabrics. The methods described are: the Patch Test on human subjects, the Patch Test on animals, the Hypodermic Injection into animals, the Intradermal Injection into man, and the Intradermal Single Injection into animals. The last method has been found to be the best screening method of all. It is simple, accurate, reproducible, rapid, and inexpensive. It can be used for the detection of primary skin irritants and cutaneous sensitizers, and results are obtained in 24 hours. It is recommended that when the results are negative with the intradermal single injection method on animals, patch tests on human subjects be conducted to confirm the results. The patch test on human subjects being very expensive, the injection test on animals will save textile manufacturers valuable time and money by enabling them to eliminate irritating materials in 24 hours, and to use the patch test on humans only on fabrics which have been found to be nonirritating and nonsensitizing to animals.

# FINISHING GROUP MEETING

## "Static Problems and their Control in the Textile Industry"

JOSEPH A LOPEZ
*Kanmak Mills, Kulpmont, Pennsylvania*
and
JOHN K HEWSON
*The John Hewson Company, New York*

This paper outlines for the textile industry the nature of static problems in textile processing operations, the reasons for the increasing severity of this problem and the four major ways in which static affects textile operations. It describes in some detail methods currently in use to overcome this problem on various types of textile operations and evaluates their success. There are many ways in which the severity of static on textile processing operations may be brought under at least partial control. Experience has shown that many of these methods of control may be limited in their effectiveness or in themselves may present processing difficulties. The development of electronic controls operating under the principles of controlled diffused discharge has increased the effectiveness of control over the problem of static. The availability of this new production and quality control tool has given effective control over static and has permitted increase in production speeds and control over quality and waste not formerly possible.

## "Textile Applications of Brighteners"

DR J P G BEISWANGER and
OPAL L SHERBURNE
*Antara Products Division of General Dyestuff Corporation, New York*

The value and limitations on the use of brighteners for improving the appearance of textiles are discussed in this paper. Practical methods of application are described for rayon, cotton and wool. In this connection the importance of satisfactory methods of control are emphasized. It has been well recognized that discrepancies occurring in the various methods of evaluation and testing lead to faulty conclusions. This paper makes a survey of the various tests utilized, pointing out their good and bad points and recommends a procedure which appears to be the most suitable for practical evaluations.

## "Advances in Theoretical and Practical Studies of Gas Fading"

WALTER PAIST, VICTOR S SALVIN
and WILLIAM J MYLES
*Celanese Corporation of America, New York*

This paper will describe the phenomena of gas fading and discuss the mechanism of the reaction in relation to the nature of the fabric, as well as the use of the newer dyes and inhibitors. The gas fading of dyed acetate fabrics is due to nitrogen dioxide which is absorbed from the atmosphere. This gas is very soluble in cellulose acetate, but does not react with the fiber to any extensive degree. Certain other fibers gas fade like acetate. Data are presented regarding the absorption of nitrogen dioxide by cotton and nylon. The acetyl value of the fiber, as well as its moisture content, has a marked effect on the rate of gas fading. It is found that the rate of gas fading can be correlated with dye structure. The nature of the chemical changes in dyestuffs and advances in the synthesis of resistant dye structures will be discussed. The type of chemical change is of importance in evaluating the newer dyes in accelerated tests. The application and effectiveness of permanent and fugitive inhibitors will be reviewed, and an attempt made to correlate inhibitor structures and properties.

## "Characteristics of Cotton Fabrics Processed in Continuous Peroxide Bleaching Systems"

T E BELL and N J STALTER
*Electrochemicals Department, E I du Pont de Nemours & Co, Inc, Wilmington, Delaware*

This paper reviews from the chemical viewpoint the effect upon cotton fabrics of bleaching in continuous rope peroxide bleach processes. Data has been collected on 16 processes and samples have been evaluated for whiteness, whiteness retention on accelerated aging, fluidity, absorbency, noncotton content, oils, fats and waxes, ash, and the pH values of the washed fabrics. Although it is extremely difficult to draw broad generalizations from the data obtained in this survey, certain aspects stand out which should be given consideration when studying the continuous peroxide bleach process. These aspects are summarized as follows:

I. The continuous peroxide bleaching process will produce satisfactory whiteness and whiteness retention on aging.

II. The fiber is not damaged as determined by fluidity measurements.

III. A satisfactory absorbency can be attained, both the caustic and peroxide treatments being mutually helpful.

IV. Noncotton values are generally in line with accepted values.

V. The amount of oils, fats and waxes remaining in the goods is slightly less than in other processes.

VI. The function of the grey sour needs further study.

VII. The pH values of goods continuously bleached are higher than from batch processes. This does not adversely affect the final product.

# THE WET PROCESSING INDUSTRY IN THE NEW YORK AREA*

**P J WOOD**

*Technical Director, Royce Chemical Company*

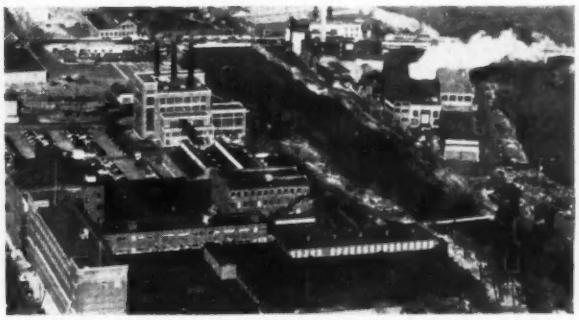
IN THE "good old days," when pot roast cost 10¢ a pound, farmers raised their own sheep and sheared the wool annually. The women of the household carded and spun the wool. In some cases, there was some individual in the family skilled in weaving on the family loom; in other cases, some traveling weaver would visit the farm and weave all the yarn that had been so prepared. Fulling and dyeing these woolen pieces was a job requiring the services of an expert.

In this district the fulling and dyeing industry goes back to Colonial times. We read that an advertisement offering for sale "The Fulling Mill, Dyehouse and utensils, with a good shop and dwelling house at Trenton Mills", appeared in the Pennsylvania Gazette in 1761 (*New Jersey Archives*, 1st Series, Vol X, page 568).

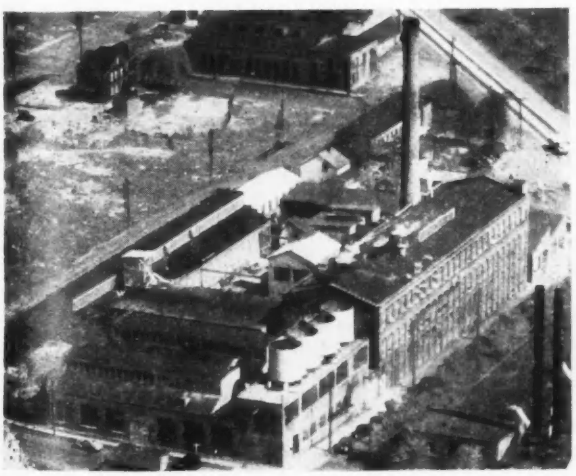
Another advertisement in the same newspaper reads: To be sold by way of Public Vendue, on Monday, April 25th, 1768, at ten o'clock in the forenoon, a Fulling Mill with a very fine stream of water, situated at Allentown in East Jersey, etc. (*New Jersey Archives*, 1st Series, Vol XXVI, page 131).

* References to ancient history in this article are mostly gleaned from "The History of Silk Dyeing in the United States" by Albert H Heusser, Silk Dyers Association of America (1927).

**Garfield Plant—Forstmann Woolen Company**
**Garfield, N J**

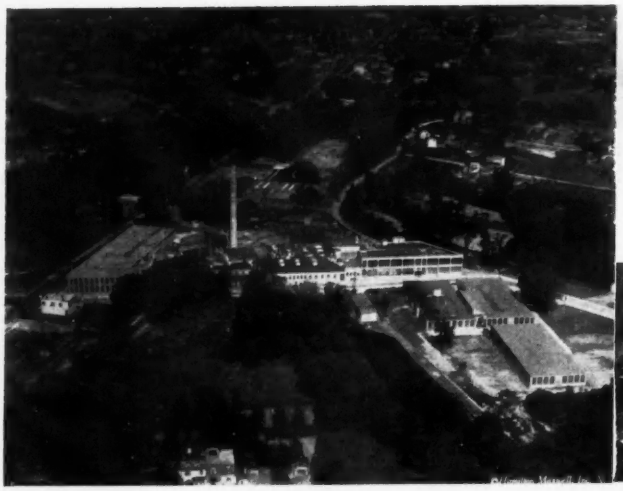


**Passaic Plant—Forstmann Woolen Company**
**Passaic, N J**

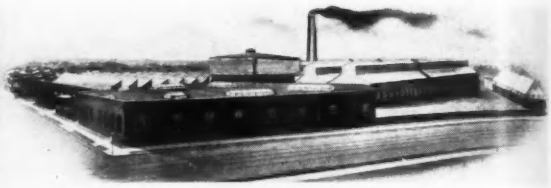


**Allied Textile Printers, Inc**
**Printex Division**
**Paterson, N J**

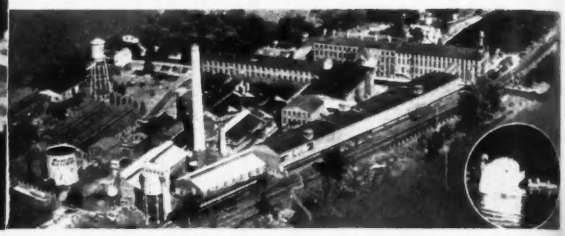
**Allied Textile Printers, Inc**
**Arrow-Regal-Standard Divisions**
**Paterson, New Jersey**



S Stroock & Co, Inc
Newburgh, N Y



Gaede Dyeing Company, Inc
Paterson, N J



Standard Bleachery & Printing Company, Inc
Carlton Hill, N J

John Johnson started a commission dyehouse and fulling mill in Newark in 1790 or before, as we find him advertising in the *New Jersey Journal* of that year soliciting dye orders. His advertising appears quite regularly in succeeding years and must have brought him prosperity, as we note that the name of the concern is changed to John Johnson and Son in 1810 when he advertised for a couple of apprentices.

Mr Dennison, a fuller of Morris County, offered to take payment for his work in country produce, chesnut rails, post-rails, nail-rods, boards, shingles and wood "from those that live handy". ("Woods Gazette" Newark, September 5, 1792).

Up to 1850, the dyeing business appeared to be geared to the pace of production from home looms. After this date, with the appearance of factory production of textiles, the dyer had to keep pace and development in this area has been phenomenal.

Ten years ago, the U S Department of Commerce, Bureau of the Census of Manufacturers, recorded New Jersey as having the largest number of converters, dyers, printers and finishers of all types of textile goods as compared with any other state in the Union. The density of industrial population in New York City and on Long Island is probably fully equal to that of Northern New Jersey in this particular field now.

Organization of the Society for the Establishment of Useful Manufactures, by a group of New Jersey men in 1791 was probably the first attempt to create an industrial community on a large scale in the United States. Alexander Hamilton is said to have been one of the prime movers in this enterprise, which proposed to use the power potential of the Great Falls of the Passaic. The Society obtained a very liberal charter, which granted perpetual freedom from taxes, a provision which irked the City of Paterson to the extent that the City recently purchased the stock, which was privately owned, and is now the owner of this valuable property.

The original idea was to go into the manufacture of cotton goods, following the example of Samuel Slater, who built, equipped and operated the first cotton mill in this country at Pawtucket in 1790.

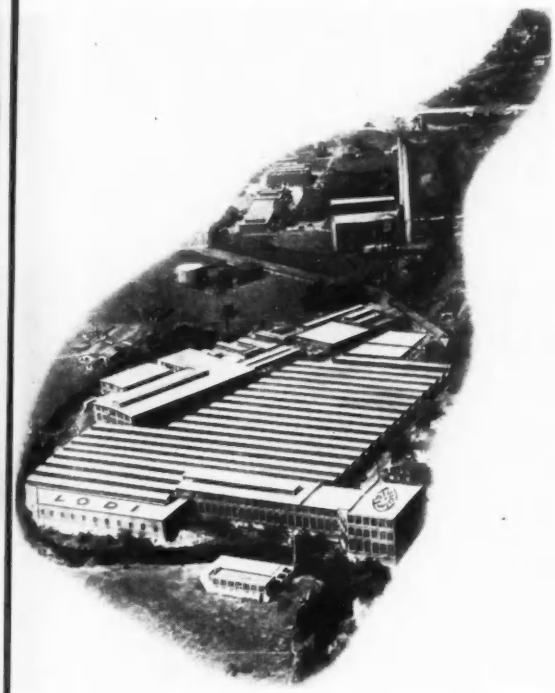
The elaborate system of dams and waterways was designed by the celebrated Major L'Enfant, who laid out the plans for the city of Washington, D C.

The city was named Paterson, in honor of William Paterson, first governor of New Jersey.

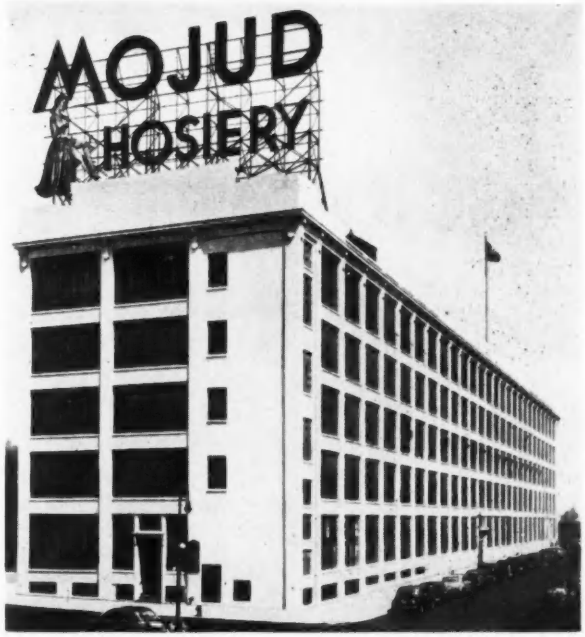
The cotton mill was completed in 1794.

Fair Lawn Finishing Company
Fair Lawn, N J

R W Bates Piece Dye Works
Garnerville, N Y




United Piece Dye Works
Lodi, N J




Mojud Hosiery Company, Inc
Long Island City, N Y

For two years, only cotton spinning was carried on, but two years afterwards the first cotton cloth was woven in Paterson. Printed cottons were also turned out in this establishment. Operation of the mill appears to have been unsuccessful as we are told that it closed down in 1796. The Society seems to have met with reverses. In the next 20 years sites along the waterways were leased and one of the Colt family of revolver fame took charge when things were at a low ebb and abolished the policy of manufacturing. Since that time the Society has confined its activities to the owning of real estate and renting the properties with power and water.

According to available records, the first Paterson commission dyer advertised that he was prepared to handle cottons, silks, woolens and linens in 1811, "with the utmost despatch".

By 1840, the town boasted 19 cotton mills and a woolen mill. There were also two dyeing and printing plants.

Today there are about 72 dyehouses and print works in and near the city.

As in New Jersey, the fullers and dyers were the first wet processors of home made textile fabrics in New York city and state.

After John Ryle started the first silk mill in Paterson in 1840, the trend of business in that area turned sharply away from cotton to the more profitable manufacture of silk. The first dyehouses were part of the silk manufacturing plants. Eventually these early manufacturers found it more practical to send out their dyeing to specialists in that art, the first dyehouses handling only skein silk and some cotton used in manufacturing mixed fabrics. The finishing of the woven fabrics for a long time was carried out by the manufacturers, being rather a simple operation and requiring a limited amount of machinery.

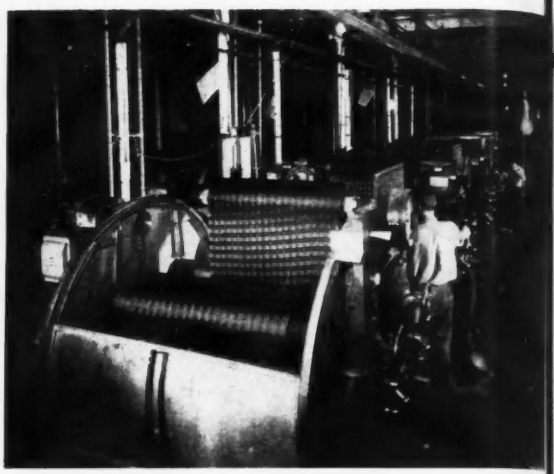
This was the beginning of the immense skein dyeing establishments, which flourished in the late 1800's and the early 1900's. Among the largest of these may be mentioned the Weidmann Silk Dyeing Company, said to have been the largest silk skein dyeing concern in the world and the Auger and Simon plant, which was almost as large.

From these two large companies gradu-

National Rayon Dyeing Co, Inc
Newark, N J

Cliffside Dyeing Corporation
Paterson, N J

Alexander Smith
Yonkers, N Y



Interior View—Antipyros Company
Kew Gardens, N Y

ated many men who made their mark in the dyeing industry in smaller plants both in Paterson and far afield.

In the fifty years following John Ryle's introduction of the silk business to this district, the industry had grown by leaps and bounds. The dyeing trade kept pace with it.

At the turn of the century, the trend of the silk business turned to crepes, a piece dyed article. In 1891, two of the first piece dyeworks were started by Alexander Blum, the Alexander Piece Dyeworks, Lodi, N J, and by Theodore Boettger in Bronx, N Y, a plant which was later moved to Lodi, N J. These two plants were later merged as the United Piece Dyeworks.

As the dyeing requirements changed, many of the skein dyers turned to the dyeing of piece goods. The old long and narrow skein dyeing boxes were adapted by providing them with hand reels, or "Tourniquets", as the French dyers called them. The pieces were knotted together and run over the reels in a double strand. The reel dyeing machine, as we know it today, was a later development.

When rayon appeared on the market, these same dyers adapted themselves to the new fiber.

Skein dyeing today is comparatively rare and is carried on by much smaller concerns. Most goods in this district covered by the geographical boundaries of the New York section are dyed in the form of piece goods.

Among the important dyers of piece goods may be mentioned United Piece Dyeworks, Allied Textile Printers, Inc, Associated Dyeing and Printing Co, Inc, Colonial Print Works and The Waldrich Co, which are principally occupied with the dyeing and printing of synthetic fabrics and some silk goods.

Other companies which specialize in the dyeing of silks and synthetic goods are the R W Bates Piece Dyeworks, Garnerville, N Y; Antipyros Company, Kew Gardens, N Y; Cliffside Dyeing Corp, Paterson, N J; Colonial Piece Dye Works, North Bergen, N J; Dundee Finishing Co, Passaic, N J; Fair Lawn Finishing Co., Fair Lawn, N J; Gaede Dyeing Co, Inc, Paterson, N J; Interstate Dyeing and Finishing Co, Passaic, N J; Ming Toy Dyeing Co, Haledon, N J; Nudye Finishing Co, Paterson, N J; Pyramid Piece Dye Works, Inc, Paterson, N J; Seyer Silk Dyeing and Finishing Co, Haledon, N J; Waverly Piece Dye Works, Elizabeth, N J; Weehawken Dye Works, Inc, Weehawken, N J; and Rainbow Finishing Corp, Portchester, N Y.

There are still a few concerns handling cotton goods: Standard Bleachery and Printing Co; Carlton Hill, N J, and Bellman Brook Finishing Co, Fairview, N J (both of whom do dyeing and printing); HoHoKus Bleachery, HoHoKus, N J; Newburgh Bleachery, Newburgh, N Y; and the Dutchess Bleachery, Wappingers Falls, N Y. The Eureka Printing Co, which specializes in the printing of cotton goods, is in Clifton, N J.

Development of the silk manufacturing and dyeing industry in and near Paterson was due to the availability of power from the Passaic Falls and an ample supply of water for dyeing and its proximity to the city of New York, where most of the silk goods were sold.

Years ago it was common to hear dyers bragging that the quality of Paterson water, obtained from the Passaic River, was particularly suitable for silk dyeing. However, we notice that most dyers in this district have installed water softening apparatus these days.

With the advent of improved road transportation, the industry moved further away from New York to locations in New Jersey, New York State, and particularly Long Island, from which points overnight deliveries could still be made.

The dyeing of wool has generally been carried on in dyehouses attached to the wool manufacturing plants, for example, the Forstmann Woolen Company in Passaic, N J, Princeton Worsted Mills in Trenton, N J, Botany Mills Company, Passaic, N J, and S Stroock and Co, Newburgh, N Y.

Most of the carpet manufacturers, such as Alexander Smith & Sons Carpet Co, Yonkers, N Y; Beattie Carpet Co, Little Falls, N J and A and M Karagheusian Inc, Roselle Park, N J, to mention a few, do their own dyeing.

Yarn dyeing is carried on by the following, among others: National Rayon Dyeing Co, Newark, N J (who dye practically all fibers in skein and package form); Banner Yarn Dyeing Co, Brooklyn, N Y; Brooklyn Yarn Dye Co, Brooklyn, N Y, and B & (Silk Dyeing Co, Elmhurst, N Y.

As for the screen printers, "Their name is legion", they are located in all parts of the New York section. New Jersey and New York City are well supplied with this craft, who ply their trade on every known type of fiber and fabric.

This account would not be complete without mentioning some of the rarer types of wet processing, such as straw bleaching, straw braid dyeing, the stripping and redyeing of old felt hats, dyeing vegetable ivory buttons, furs, skins, artificial flowers, feathers, knit goods and hosiery.

As would be expected, in the vicinity of the many large cities which exist in this section, the redyeing of garments, usually associated with dry and wet cleaning establishments, thrives in this area.

Dyers, printers, finishers—they are all here, many of them have been here a long time, they all seem to be making a living. Many of them are corporate members of the AATCC, more of them ought to be.

PHILADELPHIA SECTION—

# SYNTHETIC YARN PREPARATION*

**DAVID COOK**

*Quaker Chemical Products Corp, Conshohocken, Pa*

## INTRODUCTION

THE production of textile fabrics from yarns of synthetic origin involves a number of exacting operations. The extent to which these operations are understood and controlled largely determines the success to be had in manufacturing and in fabric quality. A technical study of synthetic-textile processing calls for a discussion of some of the more important developments in these operations. Throughout the different stages of fabric production from yarn manufacture to the finished cloth, extensive research work has been done with synthetics, both in the laboratory and in plant processing. The preparation of yarns for subsequent weaving or knitting has occupied a good share of this research. It is the purpose of the present discussion

(1) To look at the reasons for yarn sizing;

(2) To point out the principal practices of synthetic-yarn preparation with emphasis on rayon and nylon; and

(3) To indicate the degree of success which these developments have met in practical use.

As is often true with technical interests, the procedures of sizing and otherwise preparing yarns were born of necessity and were developed by trial and error. Most yarn treatments now in use, whether chemical or physical, were devised to overcome a problem, and few of these treatments could have been evaluated except in actual use. Two thoughts are of interest here: (1) the increasing complexity and close tolerances of the machinery of weaving and knitting, and (2) the advance of synthetic yarns and fabrics. The true synthetics, such as nylon, emphasize the fact that the finer the yarn denier and machinery tolerances involved, the more difficult becomes the preparatory treatment required. The variety of fibers, sizes, twists, plies, and fabrics being made today only makes the problem a broader one.

The reason that synthetic yarns need to be sized for weaving and knitting and the materials that have been and are being used for sizing are discussed by a sizing expert. It is explained that a size must give the following properties to synthetic yarns: lubricity, abrasion resistance, strength, stiffness with flexibility and freedom from static; and that sizes to be practical must be removable. The materials required to gain these properties in a size for various yarns and end uses are fully developed. Hosiery yarns and coning oils receive special attention. Newer chemicals for sizing and newer fibers to be sized are given due consideration.

## DISCUSSION

REASONS FOR SIZING SYNTHETIC YARNS——The first consideration in preparing synthetic yarns for weaving or knitting is to recognize that all synthetic yarns and fibers are manufactured clean or "bald", while natural fibers are protected with waxes, oils, or protein substances characteristic of their origins. The waxes and pectins of cotton, the sericin of silk, and the oils of wool are each an integral part of the respective fiber in the natural state and may be used in whole or in part to condition the fiber for spinning and weaving or knitting. Manufactured yarns, on the other hand, are made with only the yarn material itself, and to this must be added the proper sizes and oils to facilitate further processing.

Among the major factors to be kept in mind in preparing synthetic yarns are the following: (1) static control, (2) abrasion resistance, and (3) lubricity. Static electricity is a common phenomenon, which every textile technician has observed but knows little about. Some raw yarns without sizing or twist are so subject to static that they can hardly be handled in even such simple operations as winding from one package to another. However, the normal practice by the yarn manufacturer of adding about ½% of the right oil as a yarn finish serves to control static in the yarn and results in a measure of abrasion protection and lubrication as well.

SIZING REQUISITES——The need for lubricity, strength, and flexibility is increased in the finer-denier multifilament and lower-count spun synthetic yarns. In general, lubricity is not a matter of adding all the oil a yarn will carry, either with or without sizing, but is something that must be kept within prescribed limits. Excess lubricating oil creates an added drag and tension when the yarn moves over thread guides. A lightly oiled, glazed yarn is best insofar as lubricity of the yarn is concerned.

Maintenance of the proper strength and stretch factors of a yarn is an essential requisite of a good size. Particularly in finer yarns the need for strength is obvious. Nylon's ability to stretch and to recover is one of its features, and to some extent the rayons and other yarns will give. Thus a size must be formulated for a specific yarn or fiber so that the stretch and recoverability of the size will be in harmony with those of the yarn. One effect of erratic stretch is the appearance of shiners in the fabric in

* Presented at the Meeting-in-Miniature at the Philadelphia Textile Institute, Philadelphia, Pa. on October 28, 1950.

dyeing. These tiny bright spots are due to areas of accentuated light reflection, which in turn are caused by distorted twist or other failure of the yarn to remain uniform. Lastly, it is essential that a size be easily removable from the yarn at the proper time though not before.

PHYSICAL FACTORS——The complexity of synthetic-yarn throwing has not remained entirely chemical. A great many physical factors have entered the picture as well. The number of turns per inch, the time, temperature and relative humidity of steam setting, the type of package, the tensions to be used, maximum yarn speeds, and the air conditions are only some of the physical factors that must be considered in formulating and applying the proper sizing for a given yarn and end use of the yarn.

EARLY RAYON-SIZING REQUIREMENTS——The rayons were the first yarns to be spun into filaments from solutions, and they demanded a new approach to yarn sizing. The early fabrics in which rayon yarns were used were mainly dress crepes, satins, and taffetas. The satins and taffetas had low-twist yarns, either viscose or acetate, while the crepes usually had a low-twist acetate warp and a high-twist viscose or cuprammonium filling. The sizing requirements of these low-twist filament yarns involved the factors of abrasion, static, lubricity, etc, already under discussion. The high-twist crepe yarns (up to 60 turns per inch) posed the additional problem of holding the yarn in shape with uniform twist and permitting the proper release of the crepe twist in the boiling-off of the fabric.

SIZING WITH GELATIN——The nearest physical relative of the continuous-filament synthetics among the natural yarns was silk, and experience with silk indicated the nature of the rayon problem but did not identify the sizing to overcome it. The practice of steaming to deaden yarn or set the twist had been evolved but a sizing also was needed. Silk had its own natural sizing in sericin, but rayon was plain. Gelatin soon came into wide use for rayon warp and filling yarns; and sometimes such materials as dextrin, gum arabic and starch were used to extend or modify the gelatin. The adulteration of gelatin, though, was not always a good thing, and often the disadvantages were greater than the advantages.

A primary reason for the use of gelatin on rayon and acetate warps and filling yarns is its ability to form good sizing films with the proper reinforcing values. When a high-grade gelatin is used, its sizing results still may be among the best obtainable on rayon. On occasion, however, there has been good reason to modify gelatin with an additive or extender, and gum arabic has probably given best results for this purpose. The use of mixes with ratios as high as 30% gum arabic and 70% gelatin, with 3½-4% dry-weight application of size to viscose and cuprammonium yarns, has proved practical.

GELATIN WARP SIZING——The use of gelatin or gelatin mixes on acetate or viscose warps calls for slasher application. To the gelatin is added 8% or 10% of its weight of a softening or plasticizing oil. This formulated oil usually contains raw and sulfonated coconut, castor or a similar oil, sometimes sulfonated tallow or emulsifiable mineral oil being included. The pickup on acetate warps is equivalent to about 6% dry gelatin solids, while viscose warps are slashed with half this amount of pickup. The large viscose and acetate yarns, above 200-denier, may be oiled only, but the use of size and oil is advisable on 200-denier or less in order to prevent shiners, chafes, broken filaments, and other damage in weaving. A problem that has long bothered rayon slashing is the tendency of gelatin mixes to cause spots or build-up on the slasher guides and drying cans when the machine is stopped. The ideal size should not build up on stopping.

RAYON FILLING YARNS——The application of gelatin sizing to rayon filling yarns of 55-65 turns twist has changed little in the past few years. For all pebbles and fabrics the general soaking formula calls for 15-18 lb of oil and 3 lb of gelatin in a 50-gal stock solution. The skeins or cakes of yarn are soaked in this bath, then extracted to standard and dried. The oil is an emulsifiable formulated vegetable-and-mineral combination, containing sulfonated castor oil, and similar to the warp-slashing oil. An increase of the oil-over-gelatin ratio serves to increase the crepe pebble, but embossing practices make this unnecessary. The above ratio is nearly always maintained, while the oil may vary and contain sulfonated tallow. Static control is largely mechanical at present, though the organic phosphates are sometimes used.

SIZING WITH CASEIN——In addition to its scarcity on occasion, gelatin has been criticized for its shortcomings. Some of the objections were that its composition was undependable, it tended to ferment or form insoluble complexes on aging, and it was costly. Partly for these reasons a number of materials have been tried as replacements for gelatin in rayon sizing. Notable among these are casein and soya-bean protein. Casein, even more than gelatin, is difficult to get in good quality and hard to control. Some common impurities increase its tendency to decay and form highly disagreeable odors. It is also more difficult to maintain in a workable solution than gelatin. Casein is solubilized with plasticizers and alkalies but alkalies sometimes degrade it. A third objection is that its film strength is less than that of gelatin, giving less protection to the yarn against shiners. It may be noted also that casein has been used in a limited way in nylon-hosiery-yarn sizing.

SOYA-BEAN PROTEIN —— Soya-bean protein has been widely used, especially during the last war when gelatin was scarce. It offers the advantages of being more uniform than casein and cheaper than either casein or gelatin. Soya-bean protein makes a weaker sizing film than gelatin and its solubility is poorer—normally it is solubilized with soda ash to a pH of 9.5 or 10.0—, so that it is not likely to receive much attention when gelatin is plentiful. Nonetheless, it was of sufficient interest a few years ago to be used by the ton as a substitute for gelatin.

METHYLCELLULOSE——Considerable experimental work has been done in the past several years on the use of methylcellulose and carboxymethylcellulose (CMC) for warp slashing and sizing of viscose rayon. Although a number of proposals have been made for these materials as replacements for gelatin, hardly anyone seems to know why, but methylcellulose and carboxymethylcellulose are not being used in appreciable amounts for rayon slashing and sizing.

SIZING WITH STYMER——Attention is now being given to a new synthetic size from Monsanto Chemical Co. called Stymer S. This product is a water-soluble resin for sizing viscose and acetate, and for use on nylon. Stymer S is made with strict uniformity and seldom needs any modifiers for its use in sizing solutions. Stymer S solutions are recommended as being easy to prepare, perfectly stable for indefinite periods, and to leave no size marks in slashing when the machine stops, as well as no build-up on drying cans in prolonged operation. The sizing is easily removed from the cloth with only the use of an alkaline detergent in warm water. In the use of Stymer S the resin powder is readily made into a water solution at a temperature of 190-200° F. Slasher mix concentrations for filament-acetate warps vary from 5% to 6½% solutions; and for filament viscose from 2 to 4% solutions. A wide range of sizing temperatures is permissible, usually 125-150° F for slashing acetate and 110-130° F for viscose. Application to acetate warps is generally made to get 60-70% wet pickup, or 3½% dry solids on the yarn. Viscose requires about half this amount, some mills running that low even on acetate. It is claimed that static-electricity

troubles are eliminated with Stymer S. The particular caution in the use and removal of this product is to avoid an acid condition, as it becomes insoluble when acidified.

Other products, such as 'Kordovan' from Specialty Products Co, give results similar to those of Stymer. Kordovan is reportedly free of size marks when the slasher is stopped and possesses an advantage when used on dyed warps and on warps for fabrics that are to be waterproofed without scouring. Kordovan is applied on the slasher from a 10% solution to obtain 3½% dry solids pickup on acetate or viscose. Some mills claim to be using as little as 2½% solids on viscose, but 3% to 3½% is recommended as being better on acetate.

EUROPEAN METHODS——The practice of sizing viscose filling yarns with linseed oil has never found wide acceptance in the United States because linseed oil tends to weaken and discolor the yarns on aging, and it may be very difficult to remove after aging. It is reported that Europe, however, particularly Germany and Italy, and, to some extent, South America are using linseed oil for sizing. The German application method claims to minimize weakening of the yarn; and, while excellent weaving results are reported, there is still the problem of removal in the fabric scour. It may be scoured only with soap or synthetic detergent, plus ammonia and hydrogen peroxide. Other European procedures, such as the "Feikes" system of warp sizing and the use of the water-soluble Tyloses on spun rayon and filament rayon are reported from Germany by American consultants, but these procedures are not widely known in this country.

SPUN-RAYON SIZING——The sizing of spun-rayon yarns has followed some of the general practices of cotton-yarn sizing. The natural waxes of cotton are of course absent in spun rayon, but the practices of using starches, gums, dextrines, and softeners in sizing rayon are related to cotton procedures. Spun-viscose yarns are still sized largely with raw and soluble starches, with such modifiers as may be needed to assist penetration, adhesion, cohesion, abrasion resistance, lubricity, the proper finish and the like. The size should yield a smooth, nonsticking film with filament coherence and minimum thread coherence. Only a reasonable stiffness is needed, and excess penetration is not desirable. A wide variation is practiced in the use of starches and starch-gelatin mixes, white dextrine, British gum, water-soluble synthetic gums, proteins, sulfonated oils and tallows, glycerine, etc. The tendency to combine spun viscose and spun acetate in one yarn, or spun viscose with wool or spun nylon, as well as other combinations, only suggests some of the sizing requirements in this field. Application on the slasher and by soaking is practiced.

From the use of starches on spun rayon, many fabrics, such as spun linens, crashes, gabardines, etc, usually require enzymatic desizing before fabric scouring and dyeing. Often, especially on the light-weight fabrics, it is desirable to remove only a part of the sizing, with the remainder being retained in the fabric as a finish.

NYLON WEAVING YARNS——The widespread use of nylon yarn in weaving, following its introduction in the hosiery field, has led to new research to find the proper sizes for this fiber. The early practice in the preparation of nylon yarn for hosiery was to apply duPont's PM-90, a polyvinyl alcohol solution acidified with boric acid. A big reason for using this product was its adhering ability on nylon, while practically all of the usual sizes were unsuitable.

POLYVINYL ALCOHOL SIZING——PM-90 is best applied to nylon yarn by single-end sizing, that is, to a single thread in winding, making contact with a revolving roll, which is kept coated with the size from a trough underneath. In the preparation of nylon yarn for weaving, the yarn is given a foundation sizing of PM-90 by the single-end method to improve the adherence of any later sizing. An average pickup of 2% dry solids may be applied. Following this base sizing the warps are slashed with about 2% dry pickup of gelatin or one of the newer synthetic sizes, such as Stymer S or Kordovan. A higher percentage of size may be applied on the slasher, but weaving results are generally poorer with these higher amounts. The filling yarn may be further treated with additional sizing or an application of oil. Usually the larger yarns, 100-denier and above, require less size pickup than the figures given.

The product PM-90 is currently made by several concerns as a clear pale blue liquid of medium viscosity, containing 8.5% polyvinyl alcohol and 1.7% boric acid, USP. The water used should be fairly pure and free of minerals, giving the PM-90 a pH value of approximately 5.5. Polyvinyl alcohol was originally selected because its films combine a high degree of moisture sensitivity with good film strength. For weaving-yarn preparation boric acid is not always essential, and some sizing is done with unacidified PVA solution.

The use of polyvinyl alcohol for sizing nylon yarn, both for weaving and for knitting purposes, has been challenged more than once. There have also been many efforts made to modify PVA size by the addition of such materials as polyethylene glycol or a derivative, methylcellulose, polyvinyl methyl ether, etc. Among all the materials tried as modifiers, polyethylene glycol has probably had the best success.

POLYMETHACRYLIC ACID——Among the chemicals tested to replace polyvinyl alcohol under a gelatin or synthetic size for warp slashing, there have recently appeared two or three of interest. One of these developed for limited use is polymethacrylic acid (PMA), which is applied in the amount of 3½% to 4% of yarn weight in combination with a high ratio of a hygroscopic material. A particular caution to be observed in the use of PMA is its low pH value (around 1.5 or 2.0) in solution, which indicates its corrosive action if used on yarns for the wet knitting of hosiery.

ORTHOCRYL SIZING——A new product of interest for sizing nylon is just now being manufactured on a commercial scale. This is the acidic polymer, Orthocryl, developed by the American Aniline & Extract Co. A similar product is made by Rohm & Haas Co in smaller volume. Orthocryl is recommended as having a remarkable adhesion to nylon yarn and to require only 2% pickup, or half as much as with PM-90, for good weaving results. It is applied alone on the slasher to nylon warps or by the single-end method, followed by coning oil application; and it is now being tried on acetate warps. Excellent results are had on both yarns with less damage to the yarn in weaving and cleaner cloth and machinery. The use of this product is limited by its low pH value to weaving and tricot knitting where moisture is not required in making the fabric.

CONING OILS——Whether applied from a bath with sizing materials or in single-end pickup alone, yarn-finishing or coning oils are an essential factor in synthetic-yarn preparation. They are almost always used. The nature of yarn-finishing oils varies somewhat, depending on their application, the kind of yarn, and the results desired. They are primarily lubricants with a softening and antistatic value, and, when used with a sizing material, they should have the proper plasticizing value. Adhesiveness, penetrating value, stability, hygroscopicity, and viscosity are other considerations. It is generally essential that a yarn have an oil finish, though it may or may not be sized underneath this oil, as conditions warrant.

THROWING FOR HOSIERY——In the foegoing discussion only brief mention has been made of the preparation of synthetic yarns for hosiery knitting. Yet this is really a study in itself. In the past few years hosiery-yarn sizing and throwing has developed extensively. With the introduction of nylon yarn in hosiery eleven years ago,

the question of sizing for hosiery became more important. Silk and cotton yarns before that time had required the application of little more than oil for knitting. But nylon was different. Then the shortage of nylon during the war brought rayon into the hosiery field with more sizing and throwing problems.

RAYON-HOSIERY SIZING——Though rayon yarns are not now widely used in hosiery outside of half hose, it may be interesting to see how they were handled. Generally, rayon yarns for hosiery fall into two groups, and so do their treatments. In one group are the higher-denier (100-, 150-, 200-denier), low-twist yarns (8-, 10-, 15-turn) used in the welt and reinforcing of ladies' hose and in half hose. These are treated with 3 to 6% of compounded oils, usually emulsifiable, but with no sizing. The oil is applied in a soaking bath or to the single end in coning.

The second and more difficult group of rayon hosiery yarns are those of lower denier and higher twist. These are usually 50, 75, and 100 denier in weight and have 40, 30, and 20 turns, respectively. They are used in the body or leg of ladies' full-fashioned or seamless hosiery. The most successful sizing of these yarns is done with skein or cake soaking, by which a synthetic wax is applied from a hot-solvent bath. A synthetic wax with a melting point of 120-125° F is dissolved in an equal amount of Stoddard solvent at 158° F and the yarn is soaked in this solution. Extraction follows to give a dry pickup of 7 to 8% of wax. Bath rebuild is controlled by hydrometer readings. The sized yarn is twisted and steamed before being coned without oil.

NYLON HOSIERY SIZING —— The sizing of nylon yarn for any purpose has been characterized by the almost universal use of polyvinyl alcohol. This may be changing, but PM-90 and nylon are still thought of together. Yet PM-90 has many shortcomings as a nylon size, either for weaving or knitting, and its application is exacting. With only minor exceptions nylon multifilament yarn for ladies' hosiery is sized with PM-90 or a close modification, and it is always applied to the single end. The same PM-90 which is used for weaving yarns and contains 10.2% of solids is used for hosiery. Some 15-denier monofilament nylon in ladies' hose and 100- or 200-denier half-hose nylon are not sized but only oiled in preparation for knitting.

The 30-, 40-, and 60-denier nylon yarns of 8 or 10 turns twist used in welt and reinforcing for ladies' hosiery are normally sized with 2-3% of PM-90. This size may be applied before or after twisting according to individual preference. A light steaming to set the twist is advisable. In coning 3-4% of finish oil is applied. Instead of the usual PM-90, however, there may be used a modification of this product with a lower viscosity and with a lower solids content, of which about 10% is a polyethylene glycol product. This gives a softening and plasticizing action which leads to a softer yarn. In some instances such yarns are not given an oil finish.

FULL FASHIONED YARN——Nylon yarn for the body or leg portion of ladies' full-fashioned hosiery in the beginning was mainly 40-denier with 20-25 turns left, or Z, twist. This yarn was sized with 3-3½% of PM-90, generally applied after twisting and after steam twist-setting. Since the war, however, the bulk of the yarns used in the leg of full-fashioned hosiery has been of progressively lower denier and higher twist. 30-denier, 10-filament, 30-Z-twist yarn is still used in a service-weight hose, but this yarn was early followed by 20-denier, 7-filament, 35-Z-twist yarn. Both of these yarns are normally sized with 3.6% to 3.8% of PM-90 applied after or before twisting, with adherents to both methods and a tendency to the latter. An interesting modification of this sizing now being practiced in a limited way calls for a double sizing. The first size applied before twisting is a low-viscosity PM-90 type with a soft polyethylene glycol ingredient. 2¼% of this is applied. The second size applied after twisting and a light steaming is regular PM-90 in the amount of 2¼%. All of these nylon leg yarns are given an application of 3½-4% of lubricating oil in coning.

For the past two or three years the most popular nylon full-fashioned leg yarn has not been any of the above, in fact, not a multifilament yarn at all. Instead, it is a 15-denier monofilament nylon, which is currently being knit without twist in some cases and with 8-10 turns of Z twist in the balance. This yarn, for the most part, is not sized at all because of its single large filament and often is given little oil. The untwisted 15-denier is frequently knit from the yarn manufacturer's spool or pirn with no other sizing than approximately ½% spin-finish oil. The 15-denier yarn that is twisted is steamed after being twisted and is treated with 1 to 1½% of oil in coning. This oil should have a reasonable antistatic and lubricating value.

SEAMLESS HOSIERY YARN——Both welt and leg yarns for ladies' seamless circular-knit hosiery are of similar deniers and degrees of twist to those for full-fashioned flat-knit stockings. Because of the rotation direction of the knitting cylinder, however, seamless hosiery calls for S-twist (right-twist) yarns. The type and amounts of sizing used are also similar, though seamless yarns usually require a softer sizing and less pickup. Modified PM-90 size is probably best. Most of the dry or solvent sizes used on nylon hosiery yarns have found wider use on seamless yarns than on full-fashioned. Also, the plasticized casein sizes used limitedly on nylon hosiery yarns are probably more suited to seamless knitting. Some interesting results have been obtained with casein sizes, but their instability and lack of uniformity are largely responsible for their lack of use.

HOSIERY CONING OILS——The kind of coning oil to be used on nylon hosiery yarns has been subject to discussion from the beginning. It was first considered that teaseed oil gave superior results, but, when this oil became scarce during the war, substitutions were adopted and teaseed never regained its position. Generally, a non-emulsifiable formulated oil is used, though it has been proved over a long period that a less expensive oil will do as well under the right conditions. Two points of interest about nylon coning oils are the antistatic factor and the mineral-oil content of the product. Excess antistatic material should not be present, and mineral-oil contents up to 90% have been used successfully.

## CONCLUSION

In the light of the foregoing discussion there are a number of other factors of interest in the preparation of synthetic yarns for weaving and knitting. Only brief mention has been made of twisting and twist setting, and nothing has been said of the limited practice of fugitive tinting for identification purposes. The scope of this discussion does not permit further detail, as emphasis is placed on the chemical materials of yarn preparation.

The discussion of various sizing chemicals above is not to be construed as meaning there are no other products and practices beyond those mentioned. Rather, an attempt has been made only to discuss the more widely used materials and their application to synthetic yarns as typical procedures. Also, it should be remembered that there are newer yarns than those discussed which are entering the picture. The handling of these yarns may require different sizes and different techniques for successful fabric production. Although new yarns like Orlon and Dacron are already in limited production and thus going into fabrics, the present discussion is concerned with rayon and nylon yarns, which have received wide usage over a period of time.

The idea that such technical work as yarn preparation constitutes an art rather than a science has been changed in the development of fabrics from synthetic yarns. The very science behind these yarns has given to their handling a necessity for control and exactness, which belongs to modern processing. Good formulas and careful control yield more nearly uniform fabrics, which are constantly being improved through further research.

## PHILADELPHIA SECTION—

# MACHINERY FOR FINISHING WOVEN FABRICS MADE OF SYNTHETIC FIBERS*

**JOSEPH W TUCKER**

*H W Butterworth & Sons Company*

The finishing of woven fabrics made from synthetic fibers is presented by a machinery representative from the point of view of the equipment necessary to carry out various finishing steps physically with respect to tensions, temperatures, pressures, rates of drying, and other conditions. The student of finishing for whom the chemical side has been principally emphasized will learn here how important it is that not only rayon but especially the newer thermoplastic fibers, such as nylon, Dacron and Orlon, be handled properly every step of the way in finishing to end up with uniform, wrinkle-free, solidly dyed, dimensionally stable fabrics with the proper hand and drape. He will learn about tensionless, high-temperature jigs, clip tenter frames, loop dryers, airlay dryers, overfeed pin tenters, loop curing chambers, various heat-setting machines, decating machines and calenders.

It is nicely emphasized by the author how experience with rayon and nylon has prepared the finisher for handling the newer fibers.

## INTRODUCTION

THE production of synthetic fibers is one of the country's most rapidly growing industries. Rayon production has expanded sixfold in the last twenty years, and there is every indication that it will continue to grow. The success of rayon (we will class it as a synthetic, although the chemist tells us that it is not truly so) and nylon has stimulated the development of new fibers beyond anything dreamed of a few years ago. There is an impressive list of synthetic fibers now being produced commercially, and at the present time there are at least twelve large companies that have active programs directed toward developing even newer and more versatile synthetic fibers.

That these man-made fibers are yielding fabrics with better functional properties for some end uses can scarcely be disputed. The enhanced properties which nylon confers on fabrics—strength, durability, easy washing, fast drying, dimensional stability, lightness, elasticity, and resistance to moths — are the key to its phenomenal acceptance by the consumer. Rayon's advantage in drape, appearance, style characteristics, and tailor-made aspects, combined with its low price, has established it as the "work horse" of the man-made fiber field.

Functional properties of these new-type fibers can be profoundly affected by the dyeing and finishing operations on the material of which they are a part. In fact, in a great many cases, the finishing operation is depended upon to produce, or at least to regulate, the characteristic that is associated with the particular fiber.

Dimensional stability has been pointed out as a characteristic of nylon. Actually, nylon fabrics are unstable at elevated temperatures unless stabilized by a heat-setting procedure during finishing. This is a case where a positive operation is called for to realize all the possibilities in the final fabric that was designed in the fiber.

*Presented at the Meeting-in-Miniature at the Philadelphia Textile Institute, Philadelphia, Pa. on October 28, 1950.

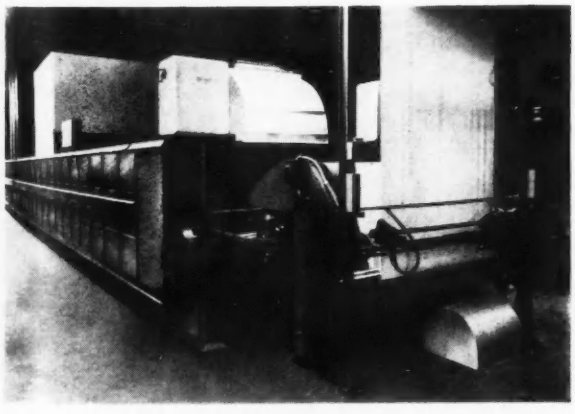


**Figure 1**
**Butterworth Overfeed Pin Tenter**

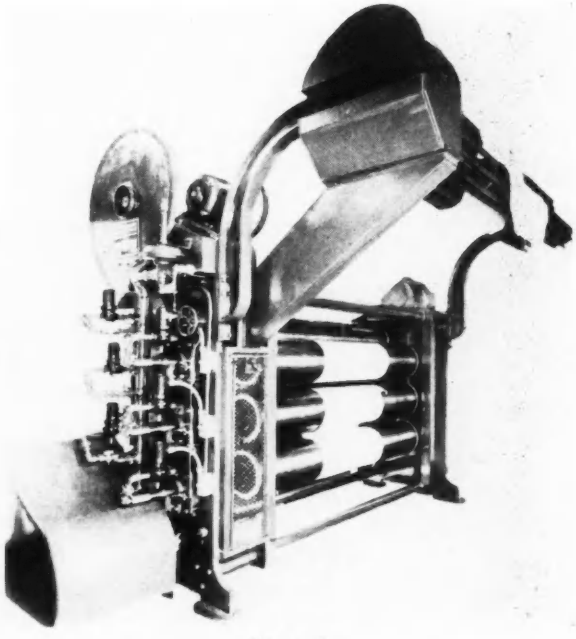


**Figure 2**
**National Nylon Heat Setting Machine**

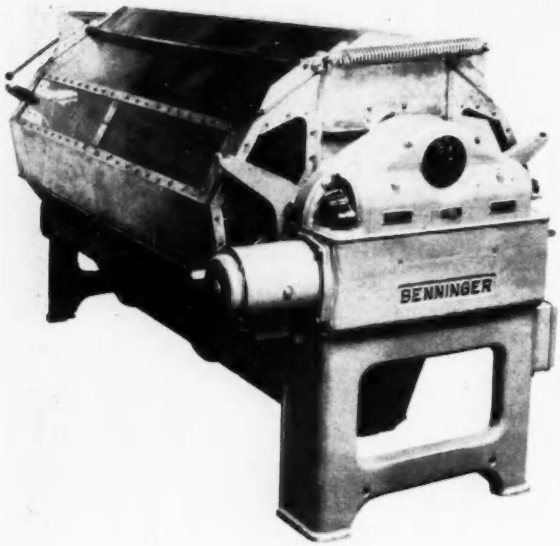



Figure 3
Benninger Enclosed Jig

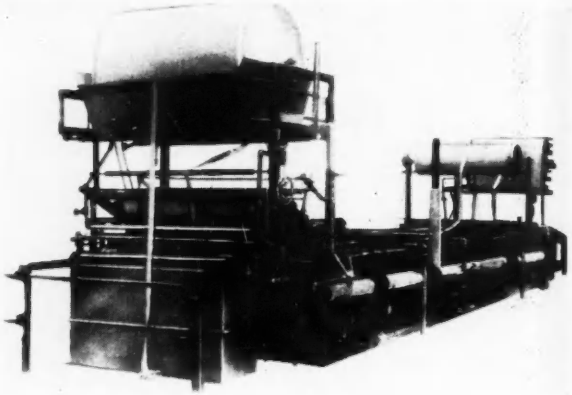


Figure 4
Hennekins Boil-Off Machine

Rayons, as we know, have poor dimensional stability when wet and call for careful handling to keep warp-wise tension to a minimum. In this case, a special technique is required and a careful choice of finishing machinery. There has even been some new machinery particularly designed with this tension problem in mind. These examples demonstrate the fact that, as new fibers are developed, the special characteristics of these fibers demand special care in finishing. Not only do the fibers themselves call for special attention, but these fibers allow new fabric formations that are the subject for particular handling in themselves. Also, it is generally the rule that fibers come to use in a much more general way than was originally anticipated by the fiber people. Nylon was considered a special-purpose fiber in the beginning, but now has come into general use in almost all fields. For the most part, this was possible only because the answers to numerous finishing problems were found. The very reason for the fiber's success, its unique character, invariably presents some challenging questions to the finisher. It is a challenge worth meeting. The immediate rewards are great and, as each answer is found, the future holds a promise of even better things in textiles.

Now, where does the finishing-machine manufacturer fit into this rapidly changing picture? We are not chemists, nor, for the most part, are we finishers. We do not set ourselves up as experts who have all the answers. Our service is to bring our engineering analysis and design skill to bear on the problems as they are presented. We must have the co-operation of the fiber manufacturer and the finisher in both presenting the problems and in working out their proper solution. Our experience in handling, first, natural-fiber and, later, synthetic-fiber fabrics is an asset that makes us a valued member of the team. We like being part of this team and look forward to better textile products as a result of our co-ordinated efforts.

## RAYON PROCESSING

Let us first give our attention to rayon processing. One of the major considerations in handling rayon fabrics is that of tension, the reason being that rayon fabrics are dimensionally unstable when wet because of the cross-sectional swelling of the fibers. Warpwise tension on wet rayon fabrics produces dimensional changes that are obviously undesirable. This particular characteristic has dictated careful selection of machinery because finishing machines have a common characteristic in almost all cases of producing warp tension to a greater or lesser degree. Some notable developments have been made, however, whereby fabrics are conveyed through particular processes with little or no tension.

While tension is obviously not the criterion to the exclusion of all other considerations, we will attempt to point out its importance as we look at some of the finishing machines currently being used in rayon processing.

RAYON SCOURING AND DYEING ——The first wet operation, scouring or boiling off, has for its objective the removal of starch, size and dirt from fabric in preparation for dyeing. It has, as a secondary objective, the releasing of fiber stresses produced by the mechanical actions of fiber spinning and fabric weaving. These internal stresses must be relieved if creases are to be avoided during processing and if residual shrinkage is to be controlled.

The Hinnekens boil-off machine is being employed in synthetic finishing after the fabric has first been padded with an enzyme for digestion of sizing. This boil-off machine handles the fabric in open width in a slack condition. The machine is equipped with a double let-off for continuous running. The fabric goes from the let-off through a wetting-out pan onto an endless variable-speed blanket conveyor, which keeps the goods in full width and free from wrinkles. The goods then pass from the blanket conveyor through a water spray and cascade onto stainless-steel tubular conveyor rods for carrying the goods through the machine, the speed of the conveyor rods being adjustable to the time required to boil-off the piece in the tank.

RAYON DYEING——Spun rayons are generally dyed in rope form in a dye beck. The beck consists of a large tank with an oval reel above it. The two ends of the material are sewn together around this reel. As it turns, the fabric is dropped into the bath in a folded fashion at one end of the tank and is drawn out of the bath at the other end. The fabric is handled in rope form in a slack condition. The agitation of the fabric in the liquor without undue strain is one of the main features of this unit.

For the production dyeing of lots of rayon containing 5000 yards or more, the pad-steam process is coming into popularity. This process calls for a range consisting, first, of a pad for applying the pigment, followed by a roller-type dryer, the rollers being driven to minimize tension. In the second section of the range, the goods are

impregnated with reducing chemicals and then run into a steaming unit. This continuous dyeing range requires only one-third of the floor space and slightly more than half of the labor cost of doing this same dyeing by the batch system. The fastness and level dyeing attained in this system are proven to be very good.

Where open-width dyeing of smaller lots is called for, the jig is in common use. Basically, the jig consists of two batch rolls over a dyebath. The material from one roll passes through the dye box under immersed rolls and is batched on the second roll. The direction of the rolls is then reversed, and the material passes through the dyebath a second time. This reversing procedure is carried on until the batch of material is dyed to the required shade. The Benninger jig has an automatic reversing and stopping device with self-acting counter, so that the number of ends or passes through the dye bath can be set at the beginning of the run and dyeing can proceed without further attention. Because of this feature, one operator can run up to six machines according to the type of cloth and the dyeing process being used. The tension on the running cloth is adjustable, and balanced expanders insure a creaseless run of any kind of fabric, obviating one source of dye streakiness. In addition to these features, an oscillating squeeze roller can be made to press on either batch as it rolls up. Repeated squeezing out of the fabric in some cases intensifies dye reaction and shortens the time normally required to match a shade. The roller also is used for final extraction of the batch before removal from the jig.

The covered or enclosed jig is particularly good for acetate dyeing since acetate are very vulnerable to gas fading. This type allows high-temperature dyes to be applied that are fast to gas fading, since a steam atmosphere can be maintained within the jig. Without the steam atmosphere, the batch could not be kept at an even temperature and shading of the selvages would result. The pressure-type jig has some very interesting possibilities for dyeing some of the new fibers that present difficulties in dye penetration.

DRYING——Drying is carried out on a tenter frame, in an airlay dryer, or in a slack-loop dryer. The loop dryer has tremendous holding capacity per foot of length. Generally speaking, this dryer holds about twelve feet of cloth for each foot in dryer length, as compared with a foot-per-foot holding capacity of a clip tenter frame. Although the clip frame presents the fabric in such a way that a given length of fabric can be dried four times as fast as in the loop dryer, this does not begin to equalize the twelve to one ratio of holding capacity between the two. The advantage in capacity makes possible a longer drying time at a lower drying temperature to prevent migration of dyestuff. As we know, if high initial temperatures are used, the surface of the fabric dries rapidly and capillary action of the internal moisture to the surface carries with it the pigment particles. With the pigment on the surface, the dyeing properties are less fast to abrasion, sunlight, washing, etc. Modern dryers have flexibility in that temperature and circulation for each section of the dryer can be controlled independently of the others. By proper adjustment of these sections, rapid initial drying can be avoided, and better results can be obtained in color fastness and softness of hand.

In addition to economy, the loop dryer has an important advantage over the clip frame in that it handles fabrics in almost a completely relaxed fashion, the only factor keeping the cloth from full shrinkage being the weight of the fabric loops. It is well to know that, in spite of painstaking precautions, considerable warp tension is developed in running fabrics into a clip tenter, and there is no chance of shrinking the material since the selvages are firmly held all along the line by clips. It was proven by one finishing company that, in changing from clip-frame drying to pin-frame drying (without any overfeed on the pin frame), the residual shrinkage was reduced by 4% on some spun-rayon materials. This gives us a good indication of the amount of tension produced by clip framing. On the debit side of the loop-dryer picture is the fact that the material is only rough-dried, and, to be acceptable to the purchaser, it must be steam-framed to width with the accompanying warpwise strains that are so undesirable.

The conveyor of a loop dryer consists of a series of poles supported by side chains. These poles pass slowly through the dryer house, and the material is festooned in long loops over the poles by an air jet and cloth-feed arrangement. The speed of the chain and material are synchronized so that the loops are held to a specific length. As the poles pass through the dryer, they are revolved at intervals so that the cloth is not marked at the point of contact with the poles. On some types of loop dryers, the poles are so designed that the upper surface expands as the pole rotates. The fabric is thus prevented from creasing as it rides over each pole. This is an important feature in handling some rayons where the drape characteristics of the fabric often make a fold in the long loops. In the airlay-type dryer, the material is held on girts as it is carried through the dryer to prevent creasing of this nature.

RESIN FINISHING——Rayons admittedly leave something to be desired in that they have a tendency to shrink when laundered, and their natural crease-resistant qualities are poor. The best-known method of overcoming, or at least minimizing, these shortcomings is by application of thermosetting resins. The process consists of the following steps:

Padding the resin,
Drying,
Curing the resin,
Washing and again drying.

In general, it is desirable to have the fabric in a relaxed condition when the resin is applied so that the material is receptive to complete impregnation. If the previous operations have been handled carefully, there will be no strain on the fabric, and the yarns will be open to receive the resin easily and completely. Impregnation of the fabric with resin solution is done on a 2-roll or 3-roll padder. A heavy squeeze is used to drive the solution into the fibers and to prevent excessive pickup on the surface. The padder and drying unit are generally arranged for continuous operation with a loop control to synchronize pad and dryer without tension on the wet fabric.

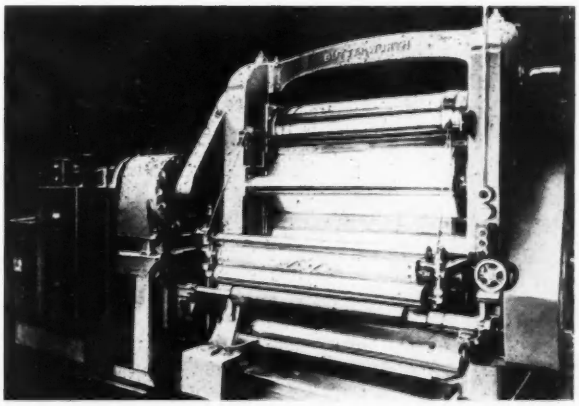


**Figure 5**
**Butterworth 80-Ton Calender**

The choice of resin dryer calls for careful consideration. Although the airlay and loop dryer are being used, there is a great deal of interest and discussion of the overfeed pin tenter in this connection. This interest was aroused in American finishers by the enviable results obtained by the English finishing trade. Their crease-resistant finish is considered by many to be notably superior to that generally produced in the United States, and the credit for this superiority is mostly given to their use of the overfeed pin tenter. This fact is particularly interesting to the American trade since recent improvements in the overfeed pin tenter have stepped up speed insofar as mechanical handling of cloth is concerned. Also, there has been some work done in using a roller-type dryer before the pin tenter to reduce the moisture and thereby to increase the speed of final drying on the tenter. It has been found that the use of this dryer before the tenter also minimizes any tendency for resin deposit on tenter pins.

After material has been padded and, preferably, after the moisture has been reduced in a roller dryer, the material is carried by driven rolls or brushes to the pin tenter. In terms of a roll system, these driven rolls constitute the "overfeed" part of an overfeed pin tenter in that the speed of the rolls can be overdriven in relation to the lineal speed of the tenter. The material delivered to the tenter is pressed onto the pins by brushes riding on each pin chain. If the rolls are delivering material faster than the chain is moving, the material is pressed on the pin chain in a rippled or overfed manner, thus allowing for uninhibited shrinkage in the warp direction. The tenter can be widened or narrowed to give the required material width. It should be noted in passing that, on a pin tenter, the material is not held as positively as on the clip tenter, so a careful balance of dryer air circulation above and below the cloth must be made if the cloth is not to be blown off the pins. It is also essential that the material be pinned in the selvage proper since pin holes show up in the finished goods and will not be tolerated in the body of the material.

The Butterworth overfeed unit has a photoelectric-eye system for following the selvage and guiding the chain so that accurate pinning along the selvage is insured. Until recently, rail guiders for tenters have been controlled by finger contact on the cloth selvage. This type of control has shortcomings well known to those familiar with this system. On light materials the control is insensitive to small changes in cloth position, and the finger curls or distorts the selvage to a degree that seriously affects the accuracy with which it is put on the pins. On this new guider a photoelectric eye on each side of the tenter delivers a signal to the control panel every time there is any lateral movement of either selvage. These signals, through the control panel, operate a motor and lead screw on each side to move the tenter rails so that the pin chain keeps in line with the selvage. The normal accuracy of guiding is plus or minus 1/16" in relation to the selvage at cloth speeds up to 60 yards per minute. The overfeed is driven by a selsyn synchronous drive from the tenter main drive to get perfect speed coordination of overfeed rolls and tenter. This overfeed has been applied to existing pin tenter installations with a minimum amount of difficulty.

On the pin tenter, resin is dried by carefully designed air circulation so that no possibility of migration exists. The speed is adjusted so as to leave about 5% of moisture in the cloth and to insure no preliminary curing. The material is then run into a box or run continuously into a loop curer.

The end result of this overfeed-pin-tenter drying is that the fabric is dried with a controlled amount of shrinkage in the warp. Since there is less possibility of tension squeezing resin to the surface, the hand can be expected to be softer and fuller.

Mechanical effects, such as calendering and embossing, can be obtained after the resin-treated fabric is dried but before curing. Effects introduced at this time are later set by the curing operation and resist subsequent washing out. Durable glaze chintz is produced by friction-calendering the resin-impregnated material and then curing. The same procedure is used for permanent embossed effects.

The curing operation is performed quite generally in a loop curer, which has the same features as the loop dryer discussed previously, except that it is frequently heated with gas rather than with steam. Proper curing time and temperature vary with the catalyst, but a good average would be three minutes at 300° F. Careful checking is required to see that overcuring is avoided as it will cause serious weakening of the fabric. If the resin is not completely cured, the desired finish qualities will not be fully realized. After being cured, the goods are usually washed to remove incompletely cured resins. The overfeed pin tenter is again a preferred means of drying from a quality point of view to obtain optimum relaxation. This final control over dimensions produces a finished product that lives up to the expectations of the fabric designer.

For some fabrics, decating is used as a final operation to prevent excessive luster and to condition the fabric. The fabric is rolled up with a blanket on a perforated cylinder through which live steam is forced. When the cloth is saturated, the steam is shut off and a vacuum pulled on the cylinder, which causes air to be drawn through the fabric. The air absorbs the excess moisture and leaves the goods thoroughly conditioned with a normal moisture regain. This operation is said to brighten fabric colors and to improve hand and draping qualities.

## PROCESSING NYLON AND OTHER NEW FIBERS

Now let us take a look at the nylon-finishing picture. We find at first glance that the situation is quite different in that, nylon being a thermoplastic fiber, our primary concern is that of heat rather than tension in finishing. With all the qualities that nylon has, one of its outstanding features is that nylon fabrics can be stabilized as to shape and dimensions by thermal setting. Heat setting of nylon causes a rearrangement and fixation of the molecular structure. The stability thus obtained is held through continued use and laundering as long as the material is not subjected to a temperature higher than that used in the setting operation. Since dimensional stability is a requirement in almost any fabric for any use, this heat-setting property is one of nylon's most valued assets.

Generally, nylon is scoured before the heat-setting operation because heat-setting usually firmly fixes any contaminating material on the fibers and makes scouring more difficult. As scouring and boiling off are, in effect, heat-setting processes in themselves, care must be taken to keep the fabric free of wrinkles and creases during these operations. For this reason, the fabric is handled in open width on a jig or continuous-boil-off machine such as discussed under rayon finishing. It can't be emphasized too highly that any creasing during this operation is to be avoided since it will undoubtedly show up as a crease or dye break in the finished fabric, especially if elevated temperatures are used. It has been found that later heat setting cannot be depended on to iron out marks from these first operations. In cases where the material is to be dyed a dark shade or is already sufficiently clean, heat setting in the greige has been a satisfactory procedure and minimizes the chance of creases in the finished piece.

NYLON HEAT SETTING AND DYEING——During manufacture, nylon yarn is drawn to give it the desired mechanical properties. This drawing operation introduces high internal stresses, as do the twisting and weaving operations of manufacturing cloth. The objective of the heat-setting operation is the removal of these fiber strains to produce a relaxed stable fabric.

Originally nylon setting was accomplished by boiling piece goods on a jig in as relaxed a condition as possible to remove all possible shrinkage. The DuPont Company early in the war developed the hot-roll setting machine with roll temperatures in the range

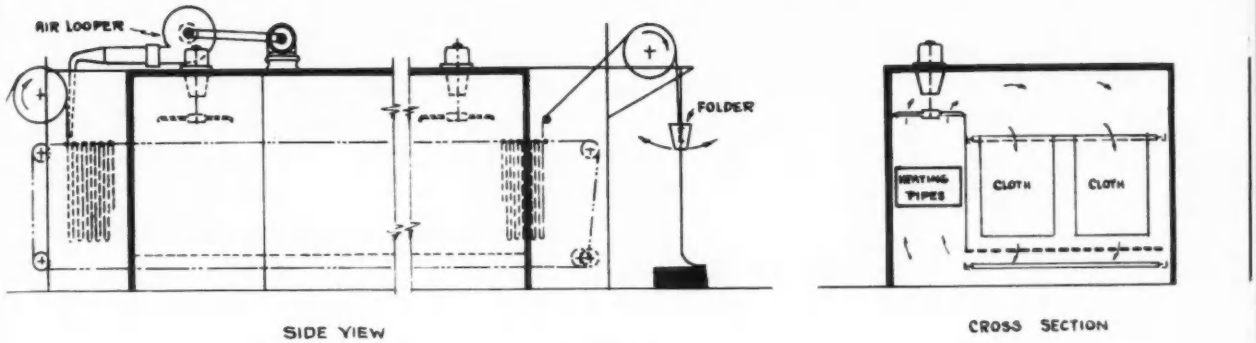



Figure 6
Proctor and Schwartz Curer

of 400 to 450° F. It has definite advantages over the original method in that fabrics set in this way have more uniform dimensional stability, better nonwrinkle properties and improvement in aesthetic qualities. To quote from their report, "A different hand is imparted to the fabric than that obtained from steam or boiling-water setting, being generally softer and fuller and more desirable for underwear and blouse-type fabrics." In addition to these considerations, high-temperature setting makes possible rapid processing with high uniformity of results.

Three general types of setting machines for woven fabrics have stemmed from this DuPont machine: The first type sets the fabric by direct contact with rolls heated internally by gas burners through a Dowtherm medium without any designed hot-air circulation on the fabric. The heat transfer is ostensibly by conduction. The National Drying Machinery Company has a dozen or more machines of this type now in service. Each roll is individually controlled as far as temperature is concerned, and all have a micro-grooved surface to reduce filling shrinkage. The number of rolls used on this machine depends on the capacity required. Fabric tension is controlled by a special arrangement whereby the same tension can be reproduced on similar fabrics. An air-jet-type cooler is used to bring the temperature of the fabric out of the critical range before batching.

The next method is the use of heated air to bring the material to setting temperature by convection. As the rolls are small in diameter, there is no particular emphasis on contact with a heated surface. The Proctor & Schwartz roller curer is being used for heat setting in this way. The Andrews & Goodrich setting machine is also designed on the convection principle.

The third system is a combination of these first two in that the material is given maximum contact with heated drums while being heated by high-velocity, high-temperature air circulation. The Proctor & Schwartz Corporation is currently building machines of this kind. The rolls are heated by impingement of high-temperature air on the outside roll surface, rather than by internal heat. Air temperature and air circulation within the machine are accurately controlled, and the speed of operation is varied to suit fabric requirements. Either an impinging air or a water-drum type of cooler follows the setting operation.

In considering these machines, it must be remembered that heat setting is a function of both time and temperature, not of temperature alone. Since the heat applied is close to the melting point of the fiber (482° F), careful control of temperature and time of contact on the roll must be exercised. It has been found that deterioration of nylon occurs at temperatures below the melting point if too much contact time is allowed. At the temperatures now being used, the time of contact on the roll is very short and is dependent on the type of fabric, result desired, and type of heat-setting machine. Suffice it to say that the entire body of the fabric must be rapidly and evenly brought up to the setting temperature, and the heat applied must be even to all parts of the material width and length if level dyeing of the piece is to be realized. Some tension on the fabric is used to insure contact of the fabric with the drums for even heat application. It has also been noted that contact with the hot roll has a beneficial effect in leveling any weaving faults and improving the quality. The latest types of heat-setting machines have a means for cooling the material after setting, since retention of heat in batched or folded goods may cause damage. It is just as vital to stop the reaction by a cooling drum or other means as it is to control the time and temperature of treatment.

There is no hard and fast rule for establishing the proper conditions for heat setting because fabric construction has an important bearing on heat-setting requirements. It is well worth while for the finisher to develop the experience necessary to do proper heat setting. Not only will he profit in producing dimensionally stable, high-quality nylon fabrics, but he will prepare himself to finish Orlon, Dacron and possibly other fibers for which heat setting is a finishing requirement.

DYEING NYLON——Light-weight nylon fabrics are successfully dyed on a roll or in a dye beck. The heavier constructions are dyed in full width on a jig, the enclosed jig having the advantage that the temperature of application can be elevated. High-temperature dyeing of nylon gives better penetration, better fastness, and superior levelness; it also makes possible the satisfactory application of some dyes that would otherwise be impossible to use. It has further been found that savings in steam and power result from the use of a closed jig. The closed jig is highly commendable, and the pressure-type jig is of particular interest for future development work on nylon fabrics.

THERMOSOL PROCESS——A particularly promising process is being developed for the dyeing of Orlon, Dacron and nylon by an entirely new technique. The DuPont thermosol process consists of applying a selected dye solution or dispersion to fabrics made from these fibers by padding, then drying on dry cans, and heating the fabric to a relatively high temperature for a short period of time. The materials are handled in the open width, and, in the case of nylon, the dyeing and heat-setting operations are carried out simultaneously since the time and temperature appear to be approximately the same for both processes. Hot-roll heat-setting equipment is suitable for thermosol dyeing, provided the machine applies heat equally to the face and back of the material. Any inequality in this respect will cause dye migration. It seems likely that special machines for thermosol dyeing and heat setting will eventually come to use.

The temperature of the rolls and the time of contact depends on the type of color being applied as well as on the fabric con-

struction. In any case, the temperatures and times will be within the limits suitable for heat setting without damage to the fiber.

Thermosol dyeing has been done on actual mill scale, but no fabrics are being dyed commercially at this time. Further work is being carried out and more factual data are being compiled. As stated previously, the future possibilities of this dyeing system appear to be very promising.

After being dyed, the fabric is washed, vacuum-extracted and usually dried on a palmer. This machine consists mainly of a large heated drum, against which material is held by a continuous blanket as the drum revolves. Since nylon dries very rapidly, this extraction and palmer drying can be carried out at reasonable speeds.

For filament goods, calendering of the fabric for final finish is done where a flat closed texture, giving good cover, is required. The Butterworth 80-ton 3-roll hydraulic calender is representative of the general type being used, since the character of the nylon fiber calls for heavy calendering pressures. The machine is necessarily of heavy construction to withstand the rugged duty called for in this type of work. After a fabric has been calendered and sometimes when it has been hot-air-dried, it may be run through a button breaker to soften the hand. The results of this last operation depend on the fabric construction as the fibers themselves are not affected by the action of the knobbed roll on the fabric.

## CONCLUSION

This discussion of some of the factors to be considered in machines for finishing synthetics has necessarily been general, and the limitation of time prevented doing full justice to all the machine details. However, it has been a pleasant experience to come before this meeting to stir some thoughts in your minds. We all agree that the advent of the synthetic fiber has been a stimulating influence in the trade. Every day we are making improved fabrics with the present synthetics. The future holds a promise of even better things from the fibers we now have and the fibers to come.

## LIST OF TEXTILE CHEMICAL SPECIALTIES FOR "1952 TECHNICAL MANUAL AND YEAR BOOK"

To Manufacturers and Importers of
Textile Chemical Specialties

30 Lahey St
New Hyde Park, N Y
Sept 30, 1951

Gentlemen:

The American Association of Textile Chemists and Colorists is again collecting material for a new "Technical Manual and Year Book", namely, for the 1952 edition. According to our new policy with respect to the List of Textile Chemical Specialties, new entries are to be accepted only every alternate year, and the next opportunity for this gratis service is now before you.

All manufacturers and importers of textile chemicals are therefore invited to prepare cards, according to directions on p 262 of the 1951 edition, for

ONLY THE FOLLOWING:

New Entries
Corrections
Deletions

Unnecessary cards, that is, cards for entries that are already correct, will be thrown away. Cards that are not made out in the proper form will be returned for correction. All that is necessary is to follow the style of presentation and the directions of the 1951 List. And please

DO NOT USE ALL CAPITAL LETTERS for names of products.

The deadline for receipt of material for the 1952 List is November 15, 1951.

Yours truly,
Carl Z Draves
For Publications Committee

## NNE Officers and Committee Chairmen Meet

AT A MEETING of the officers and committee chairmen of the Northern New England Section on Sept 7 at Andover, Mass, the following meeting schedule was outlined for the year 1952:

January 25—Boston
March 7—Massachusetts Institute of Technology
April 18—Lowell Textile Institute
May 16—Andover Country Club
June 6—Annual Outing, Merrimack Valley Country Club
November 6-9—Convention
December 5—Annual Meeting, Lowell Textile Institute

In other committee business, Chester Kopatch was appointed chairman of the 1952 Outing Committee and a report of progress was made on the Intersectional Contest Paper to be presented at the New York Convention.

—♦ ♦—

## Dr Weidmann to Speak at Oct 26 NNE Meeting

IT HAS been announced by Richard G Robertson, publicity chairman of the Northern New England Section, that the speaker for the October 26th meeting of the Section, to be held at the Lowell Textile Institute, will be Dr Charles Weidmann of the Ciba Company. Dr Weidmann will speak on "The Molten Metal Dyeing Process".

## Calendar of Future Meetings

**COUNCIL:** Oct 18 (Hotel Statler, N Y); Nov 16 (Hotel New Yorker); Jan 18, 1952; April 18, 1952; June 20, 1952; Sept 19, 1952 (all in New York); Nov 6, 1952 (Boston).

**GENERAL RESEARCH COMMITTEE:** Dates and sites are the same as the Council's.

**NATIONAL CONVENTIONS:** 1951—October 17-19, Hotel Statler, New York, N Y; 1952—November 6-8, Boston, Mass; 1953—Sept 17-19, Hotel Stevens, Chicago, Ill; 1954—Atlanta, Ga.

**HUDSON-MOHAWK SECTION:** Oct 26 (Hotel Utica, Utica, N Y); Dec 7, Feb 1, 1952, Mar 21, 1952, May 2, 1952 (all at Jack's Restaurant); June 20, 1952 (Annual Outing).

**NEW YORK SECTION:** Nov 30 (Swiss Chalet); Jan 11 (Hotel New Yorker); Feb 29 (Hotel McAlpin, New York); April 18 (Swiss Chalet); May 16 (Swiss Chalet); June 20 (Outing).

**NORTHERN NEW ENGLAND SECTION:** Oct 26 (LTI, Lowell, Mass); Nov 30 (Annual Meeting, Boston, Mass); Jan 25 (Boston); Mar 7 (MIT); April 18 (LTI); May 16 (Andover Country Club); June 6 (Annual Outing, Merrimack Valley Country Club); Dec 6 (1952 Annual Meeting, LTI).

**PACIFIC SOUTHWEST SECTION:** Oct 6 (Annual Outing, Ojai Valley Inn, Ojai, Cal); Jan 11, 1952; March 28, 1952.

**PHILADELPHIA SECTION:** Oct 26, Dec 7, Jan 18, 1952 (all at Kugler's Restaurant, Philadelphia).

**RHODE ISLAND SECTION:** Oct 26 (Providence Engineering Society; Nov 16 (Johnston's).

**SOUTH CENTRAL SECTION:** Dec 1 (Hotel Patten).

**SOUTHEASTERN SECTION:** Dec 8 (La Grange, Ga).

**WESTERN NEW ENGLAND SECTION:** Nov 9, Dec 14 (both at Rapp's Restaurant, Shelton, Conn).

*Contribution———*

# EXPERIMENTS WITH A SMALL ROTARY CORE-SAMPLING TUBE FOR RAW WOOL*

GEORGE C LeCOMPTE and HENRY R KELLER
*U S Dept of Agriculture*

and

STANLEY P DAVIS
*Texas A & M College*

**Experiments by the U S Dept of Agriculture over several years have indicated the reliability of sampling raw wool by means of 3-inch-core sampling devices for a determination of shrinkage for wool, that is the loss of weight from a standard scouring procedure. The authors present a sketch of a new 7/8-inch rotary coring tube and data that show the correlation obtained between shrinkages determined from core samples of such small diameter and actual shrinkages from full-scale lots of wool.**

Experiments in core sampling over the past several years have demonstrated that this method is the most reliable means yet found of obtaining samples of domestic wools for the determination of shrinkage. In the sampling and testing work first undertaken by the Department of Agriculture, a coring tube of 3-inch diameter was used. This sized tube, made of steel, was heavy in itself and, in addition, required for its operation an electric motor of considerable weight. This meant that it was a difficult physical task to draw cores. For this reason the Department of Agriculture some years ago began experimenting with tubes of smaller diameter.

Field experiments were initiated in 1947 and completed in 1948 to test the accuracy of shrinkage determinations made on samples obtained from the use of a rotary coring tube with 7/8-inch diameter cutting edge. The design for this tube is shown in Figure 1. The experiment involved 38 lots of domestic wool of various grades and states of origin. From each lot, consisting of 10 or 15 bags, two samples of 100 cores each were drawn. The samples were processed in the laboratories of the Department of Agriculture, appropriate processing techniques were followed, and the shrinkage of each sample was calculated. The various lots were scoured under carefully controlled conditions in the plant of the A & M College of Texas at College Station, Texas. The shrinkage results obtained from the core sampling and from the scouring plant are shown in Table I.

In Table I it can be seen that the extreme range of deviation between the samples and the entire lots is from a low of 2.8 to a high of 1.8 percentage points. These results are gratifying when it is remembered that teams of expert appraisers on series of tests such as this commonly estimate shrinkages with deviations of as much as 5, or in extreme cases as much as 10, percentage points plus or minus from the true shrinkage.

At the same time that these small core samples versus entire lot comparisons were made, the statistical aspects of core sampling by the small 7/8-inch cores were investigated by the Department. A large series of individual cores were drawn and tested separately. From the individual core results, it is possible by the proper statistical methods to derive values which will give objective predictions of the accuracy that theoretically can be obtained from a given number of

**TABLE I**
**COMPARISON OF SHRINKAGES BETWEEN SAMPLES OBTAINED WITH 7/8-INCH CORING TUBE AND ENTIRE LOTS**

| St No | Description of Wool | Shrinkage % | | | Difference from Entire Lot % | |
|---|---|---|---|---|---|---|
| | | Entire Lot | Core Sample 1 | Core Sample 2 | Sample 1 | Sample 2 |
| | *Fine* | | | | | |
| 7188 | Fine Ohio | 57.6 | 57.1 | 56.8 | —0.5 | —0.8 |
| 7182 | Fine Wyoming | 63.9 | 64.3 | 65.3 | +0.4 | +1.4 |
| 7177 | Fine Midwest Fed * | 70.5 | 70.6 | ... | +0.1 | .. |
| 7194 | Fine Oregon | 67.9 | 66.6 | 67.5 | —1.3 | —0.4 |
| 7207 | Fine Utah | 54.2 | 55.8 | 55.5 | +1.6 | +1.3 |
| 7206 | Fine Utah | 53.1 | 54.5 | 54.2 | +1.4 | +1.1 |
| 7201 | Fine Utah | 54.5 | 54.2 | 55.6 | —0.3 | +1.1 |
| 7212 | Nebr Fine Fed | 69.5 | 68.3 | 69.7 | —1.2 | +0.2 |
| 7208 | Iowa Fine Fed | 58.8 | 58.5 | 58.7 | —0.3 | —0.1 |
| 7213 | Iowa Fed Lambs (Fine) | 60.1 | 60.2 | 60.9 | +0.1 | +0.8 |
| 7199 | W Va Fine Clo | 61.6 | 60.9 | 60.9 | —0.7 | —0.7 |
| 7223 | W Va Fine Sta | 56.7 | 55.7 | 57.0 | —1.0 | +0.3 |
| 7227 | Colo Fine Orig | 71.7 | 72.5 | 72.6 | +0.8 | +0.9 |
| 7225 | Colo Fine Yearlings | 70.9 | 71.1 | 72.2 | +0.2 | +1.3 |
| 7230 | Mich Delaine | 63.4 | 61.8 | 65.1 | —1.6 | +1.7 |
| | *½ Blood* | | | | | |
| 7183 | S Dakota ½ Blood | 55.8 | 56.4 | 57.5 | +0.6 | +1.7 |
| 7209 | Minn Bright ½ Blood | 55.1 | 56.1 | 56.4 | +1.0 | +1.3 |
| 7221 | Minn Semi ½ Blood | 61.5 | 60.9 | 61.7 | —0.6 | +0.2 |
| 7214 | N Y Graded ½ Blood | 49.2 | 49.6 | 49.5 | +0.4 | +0.3 |
| 7200 | Ohio ½ Blood | 53.9 | 54.3 | 55.0 | +0.4 | +1.1 .. |
| 7236 | Graded Ohio ½ Blood | 50.1 | 49.5 | 51.6 | —0.6 | +1.5 |
| 7222 | W Va ½ Blood Staple | 51.0 | 50.5 | 51.7 | —0.5 | +0.7 |
| 7229 | Mich ½ Graded | 61.6 | 59.2 | 62.6 | —2.4 | +1.0 |
| 7234 | Graded Wisc ½ Blood | 52.2 | 52.1 | 51.2 | —0.1 | —1.0 |
| 7220 | Belle Fourche ½ Blood | 57.4 | 56.6 | 58.9 | —0.8 | +1.5 |
| | *⅜ Blood* | | | | | |
| 7189 | Wisc ⅜ Blood | 45.4 | 44.3 | 45.6 | —1.1 | +0.2 |
| 7187 | Idaho ⅜ Blood | 54.8 | 54.6 | 54.4 | —0.2 | —0.4 |
| 7216 | Graded ⅜ Utah | 53.2 | 54.4 | 55.0 | +1.2 | +1.8 |
| 7224 | Graded Ohio ⅜ Blood | 47.0 | 44.2 | 45.8 | —2.8 | —1.2 |
| 7231 | Graded Colo ⅜ | 56.2 | 55.5 | 57.0 | —0.7 | +0.8 |
| 7228 | Nebr Bright ⅜ | 62.0 | 62.8 | 63.0 | +0.8 | +1.0 |
| 7233 | Graded Minn ⅜ | 48.2 | 46.3 | 46.5 | —1.9 | —1.7 |
| 7232 | Graded Semi ⅜ Bl S D | 59.2 | 57.3 | 58.7 | —1.9 | —0.5 |
| | *¼ Blood* | | | | | |
| 7186 | Oregon ¼ Blood | 51.4 | 50.6 | 51.1 | —0.8 | —0.3 |
| 7185 | Minn ¼ Blood | 48.3 | 48.7 | 48.7 | +0.4 | +0.4 |
| 7215 | Minn ¼ Blood | 46.1 | 45.3 | 46.9 | —0.8 | +0.8 |
| 7235 | Graded Colo ¼ Blood | 55.0 | 55.1 | 56.4 | +0.1 | +1.4 |
| | Average | 56.6 | 56.2 | 57.1 | | |

* Not included in average figures.

* A contribution from the Denver Wool Laboratory of the Livestock Branch, Production and Marketing Administration, U S Department of Agriculture.

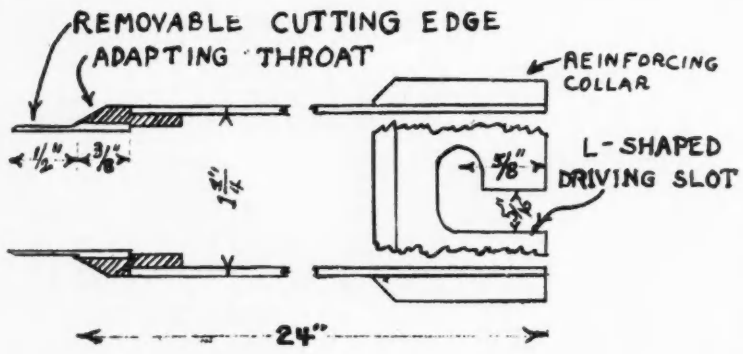



**Figure 1**
**⅞" Rotary Coring Tube**

cores. A summary of these findings is presented in Table II.

**TABLE II**
**STATISTICAL FINDINGS ON CORING WOOL WITH ⅞-INCH CORING TUBE**

| *Statistical Quantity* | *Value of Statistical Quantity in Percent Yield of Shrinkage*[a] |
|---|---|
| Standard Deviation Individual Cores within bags 6w | 4.5 |
| Standard Deviation Individual Cores Between Bags 6b | 1.5 |
| Expected limits of error, p = 0.997 10-bag lot, 10 bags cored, 100 cores | 1.35 |
| Expected limits of error, p = 0.997 20-bag lot, 20 bags cored, 200 cores | 0.96 |
| Expected limits of error, p = 0.997 30-bag lot, 30 bags cored, 300 cores | 0.78 |
| Expected limits of error, p = 0.997 100-bag lot, 10 bags cored, 100 cores | 1.92 |
| Expected limits of error, p = 0.997 100-bag lot, 20 bags cored, 200 cores | 1.32 |
| Expected limits of error, p = 0.997 100-bag lot, 30 bags cored, 30 cores | 1.05 |

[a] Expected limits of error calculated from equation:
Error, p = 0.997

$$= 3 \sqrt{\frac{(N-n)}{N}\,\frac{(6b^2)}{n} + \frac{6w^2}{nK}}$$

where n = bags sampled, 6b = standard deviation between bags, 6w = standard deviation within bags, K = cores per bag, N = bags in lot.

In connection with Table II it should be pointed out that the greatest theoretical deviation which can be expected for a probability of 0.997 of 100 cores with every bag in the lot sampled is ±1.35%. But to obtain this accuracy it would be necessary to eliminate from consideration every possible source of error other than the cores. Other anticipated sources of error would be errors in weighing core samples, errors in comparative mill tests, variations in technique while processing the samples, etc. Complete elimination of all these sources of error is a matter of great technical difficulty, and the theoretical extreme limits of error represent only the ideal at which the sampling method can be aimed. This is further confirmed when the differences in Table I are examined.

Attention is called to the fact that the core samples representing Fine, ½ Blood, ⅜ Blood, and ¼ Blood wool from the different areas of origin all exhibit the same relative degree of accuracy. Comparisons between the shrinkages determined from ⅞-inch core samples and from scouring entire lots show extreme deviations of —2.8% to +1.8%; however, additional information should be obtained before considering general adoption of the ⅞-inch coring tube.

At the same time that the above-described tests were being conducted, results from similar experiments in which a tube with a 1¼-inch cutting edge was used indicated sufficient accuracy to warrant the adoption in 1948 of this size of tube as the official size for shrinkage determinations of Texas and Territory wool purchased and sold by the Commodity Credit Corporation.

During the past year the Department of Agriculture has been engaged in a research program to investigate the entire field of core sampling for shrinkage determination. Tests and experiments undertaken have been designed to determine the most efficient and accurat equipment, coring patterns, and sampling techniques. Experiments with small-diameter pressure tubes, which are pushed into the bag by hand rather than by rotary action, are being included in recent field investigations, and results will be reported as progress warrants.

—♦ ♦—

## Student Award Committee Names 1951 Winners

THE Student Award Committee has announced the 1951 winners of AATCC awards in schools having Student Chapters as follows:

Lowell Textile Institute — Ludwig Rebenfeld

North Carolina State College—Edward Armond Schlirf

Philadelphia Textile Institute—Walter P Dean, Jr

Georgia Institute of Technology — George H Fisk

New Bedford Textile Institute—Anibal L Ferreira

Clemson College—Walter Lee Thompson

Bradford Durfee Technical Institute—Lynwood I Gibson

Utica Technical Institute — Ernest Larrat, Jr

The award this year was again in the form of a new book, "The Physical Chemistry of Dyeing", by Thomas Vickerstaff. The members of the committee felt that this publication fills a long-awaited need for this specific material in the field of textile chemistry, and that this book is written in a style neither too complex nor too simple to serve the purposes of these young chemists.

In addition to receiving the book, each student automatically becomes a Junior Member of the Association for his first year without cost to him.

This award is an annual presentation to a graduating senior in each school. The winners are chosen by their respective faculties as having done the best work in textile chemistry and dyeing during their school careers. From reports the committee has received from the various schools, it appears that the award is serving its dual purpose of stimulating work of high quality and increasing student interest in Association affairs.

Members of the award committee include: Joseph Lindsay, Jr, *Chairman*, T R Smith, Percival Theel, George H Wood, P J Wood and H C Chapin.

## EMPLOYMENT REGISTER

***This column is open for two insertions per year, per member, without charge. Blanks can be obtained from, and filed with, the Secretary of the Association, Lowell Textile Institute, Lowell, Mass. It is understood that these will be open to inspection by prospective employers who can obtain further information from the Secretary.***

51-15

*Education:* Equivalent of U S college, with additional graduate study; including five months in U S A.

*Experience:* 11 years; since 1945 as dyeing master in mill of 900 employees specializing on wool.

*Age:* 35; married; references; citizen of Denmark seeking position in North America, preferably southwest U S A.

10-1, 10-15

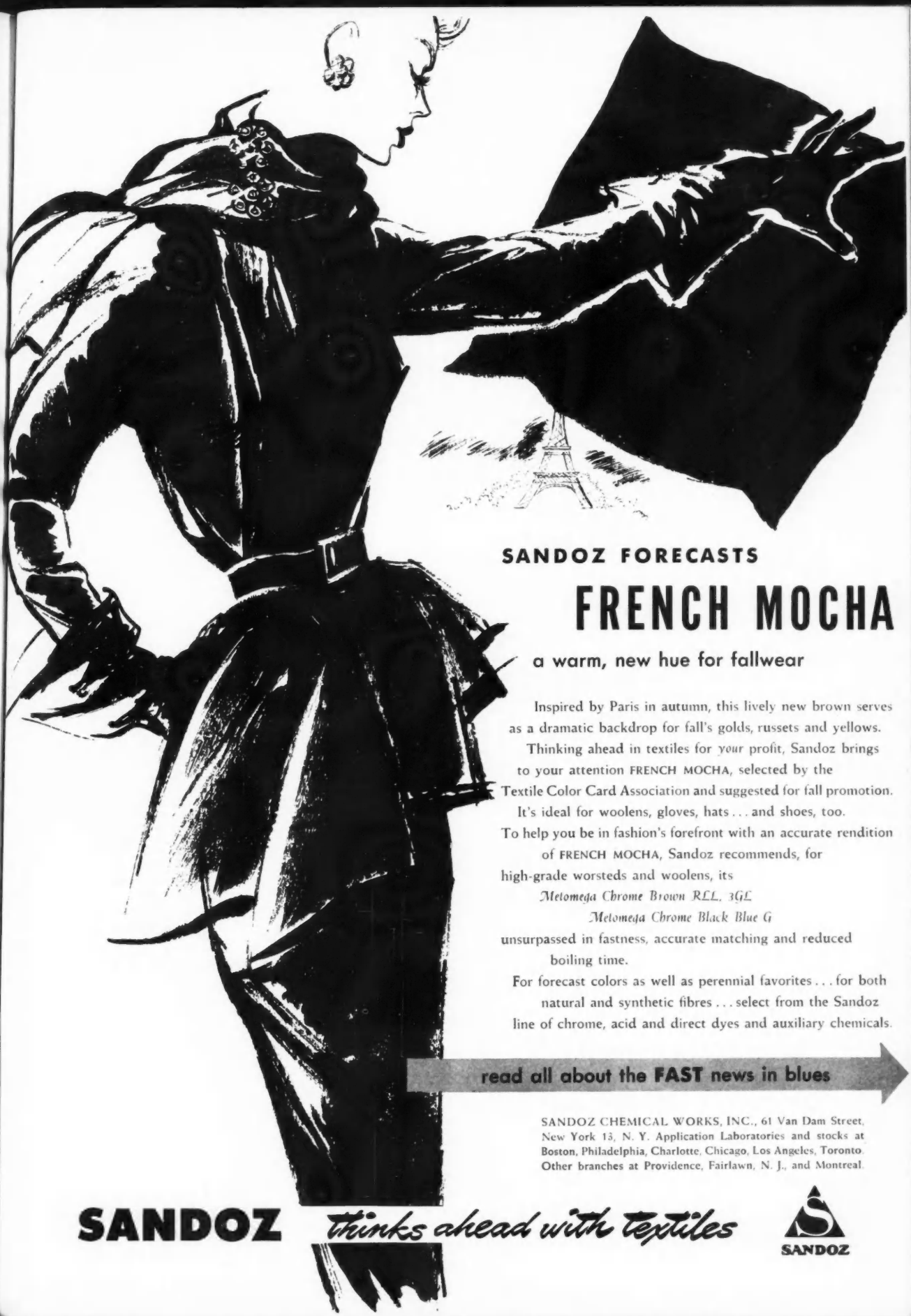
51-16

*Education:* M S in chemistry, with further graduate study.

*Experience:* Research chemist, including five years in textiles.

*Age:* 34; single, references; South preferred.

10-1, 10-15



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|---|---|---|---|
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| Fastness to Water: | change in shade | 5 | 5 |
| | staining | 5 | 5 |
| Fastness to Washing at 140 F: | change in shade | 4–5 | 4–5 |
| (medium shades) | staining | 4 | 4–5 |
| Fastness to Alkalies | | 4 | 4 |
| Fastness to Sulphite | | 5 | 5 |
| Fastness to Acids: | Acetic Acid 30% | 5 | 4 |
| | Hydrochloric Acid 10% | 2 | 2 |
| Fastness to Scrooping | | 4 | 4 |
| Fastness to Rubbing | | 5 | 5 |
| Fastness to Perspiration: | change in shade | 4–5 | 4–5 |
| | staining of wool | 5 | 5 |
| | staining of cotton | 5 | 5 |
| Fastness to Heat | | 5 | 4–5 |
| Fastness to Hot Wet Pressing | | 5 | 5 |
| Fastness to Formaldehyde | | 4 | 4 |
| Dischargeability by special recipe | | 4 | 4 |
| Sensitive to Metals: | copper | 4 | 4 |
| | iron | 4 | 4 |
| Sensitive to Lime | | not sensitive | |
| Change of shade in artificial light | | greener | greener |
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| Reserve of Nylon | | white | white |
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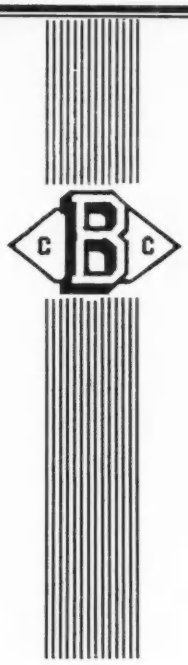

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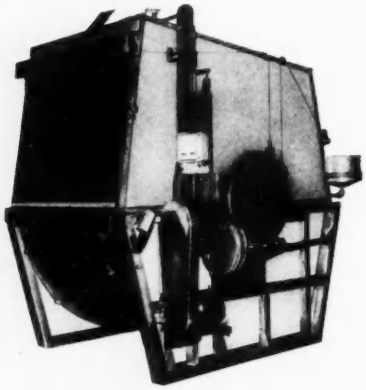

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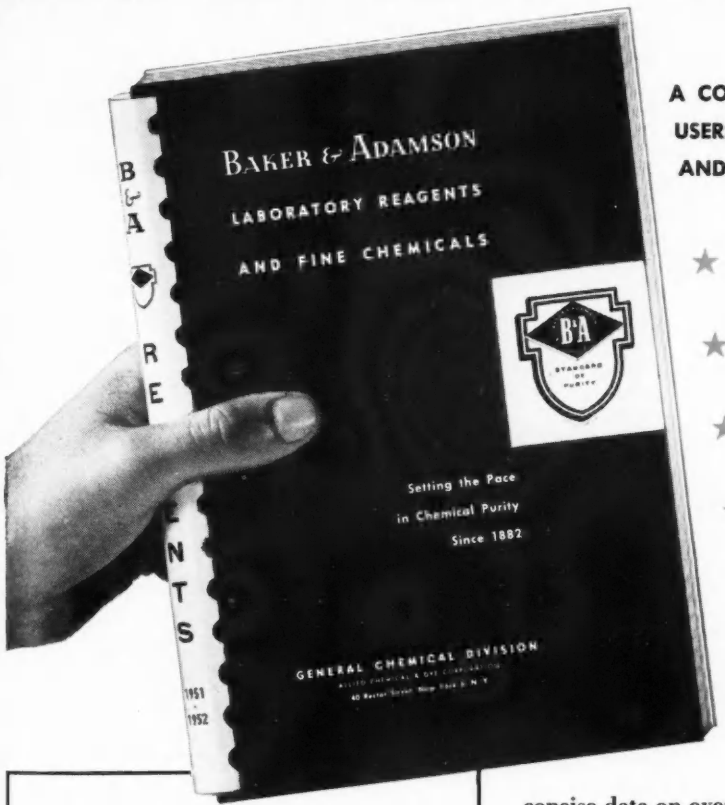


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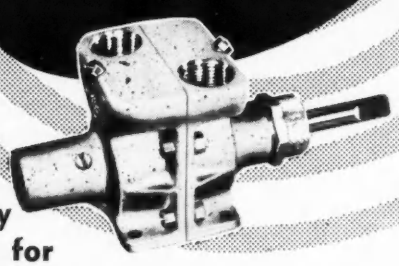

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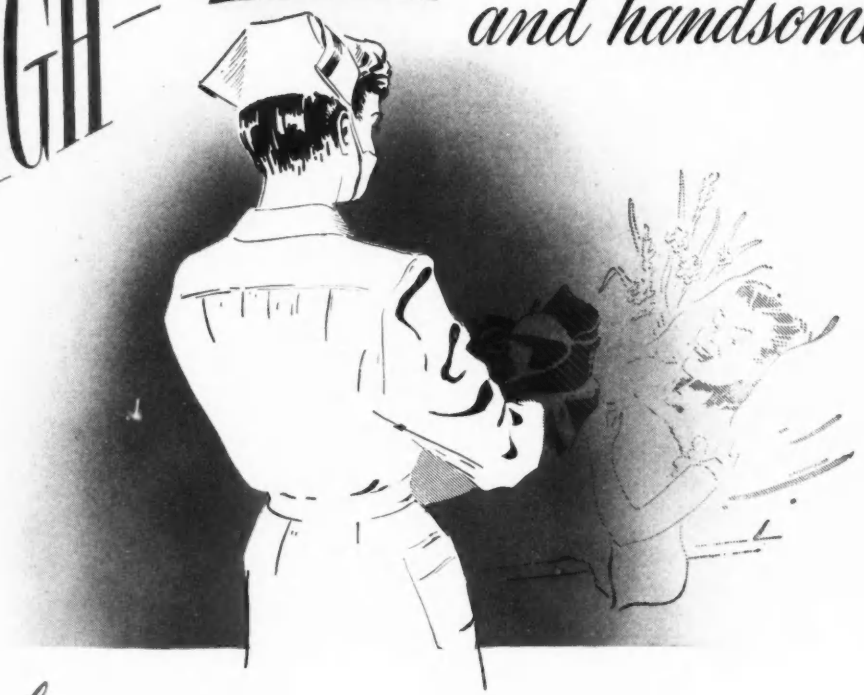

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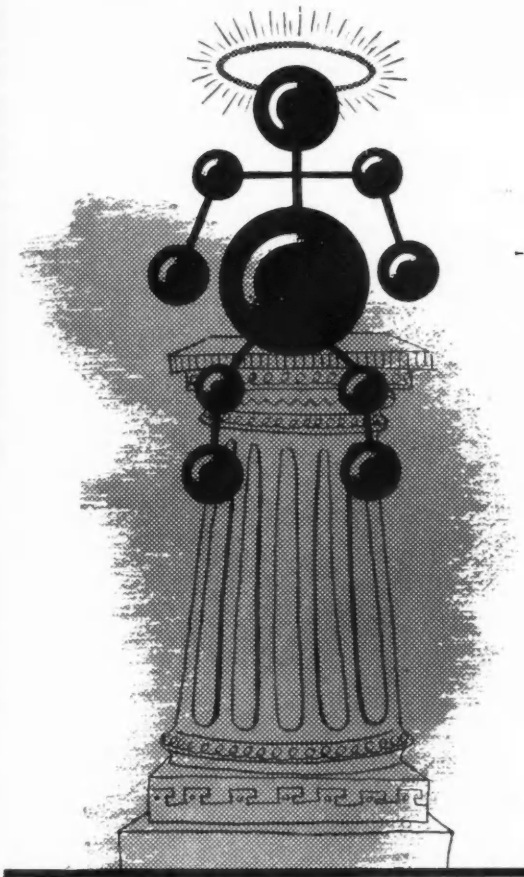

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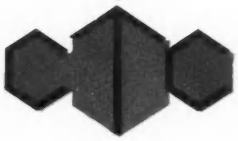

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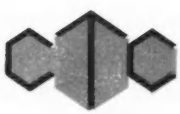
tex- chem co. 

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BEAKER #2
(one liter) Same contents as Beaker #1 but with 5 cc of Versene T added.

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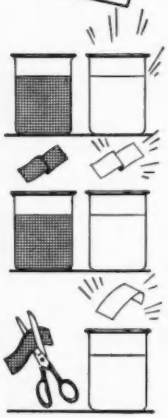

First, add the caustic to each beaker. Then, to Beaker #2, add 5cc of Versene T. Heat both beakers to boiling point and add the 5cc of the Ferric Chloride to each beaker. Note the difference between the solutions. Beaker #1 (containing no Versene T) is muddy with rust. Beaker #2 is water-white. Next, put a small strip of clean white cotton cloth in each beaker and boil a few minutes. Remove strips and rinse with water. Note the difference. Versene T has kept its strip white in spite of the iron that was added.

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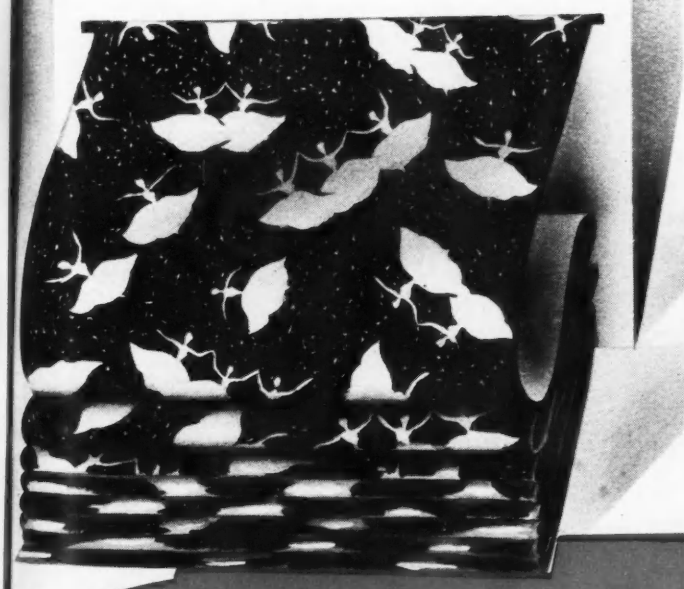

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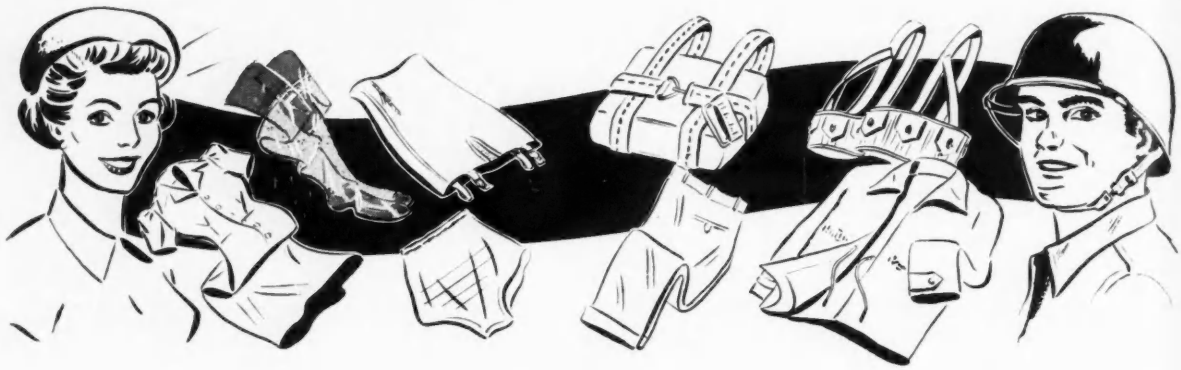

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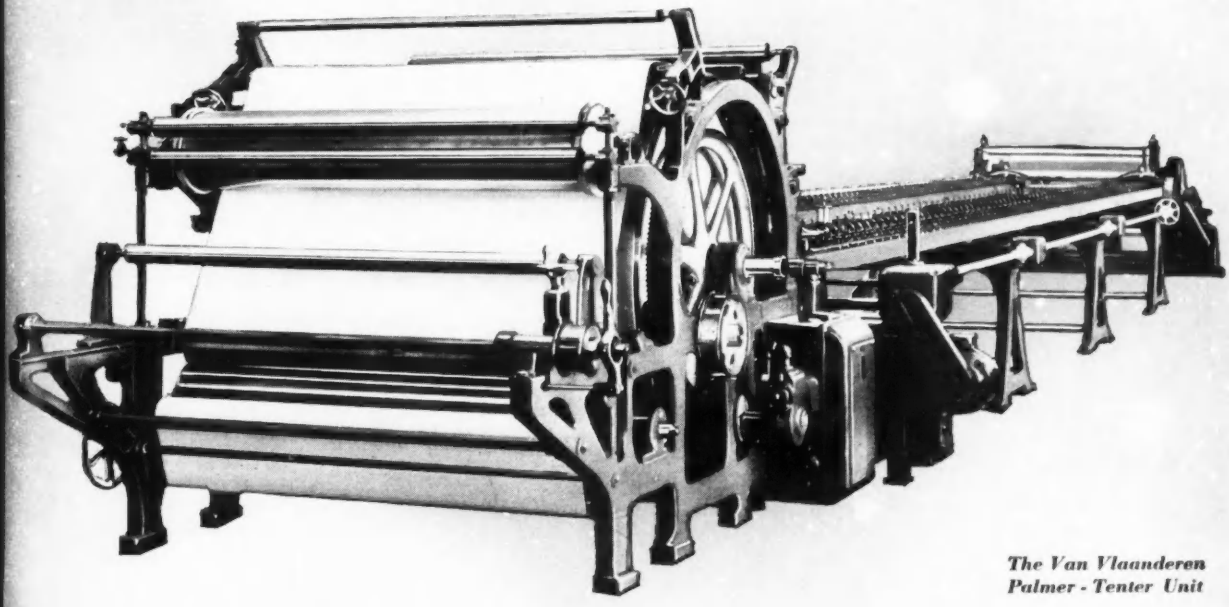

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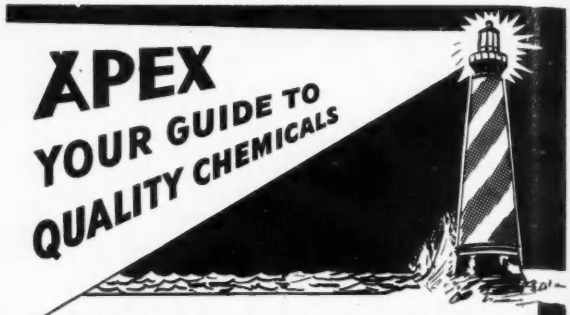

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In plants which actually manufacture the acids and alkalies you use, Prufcoat has been providing positive protection against costly corrosion for over 10 years now . . . *on concrete floors, walls, ceilings, structural steel, tanks and other equipment.* Write for Prufcoat literature.

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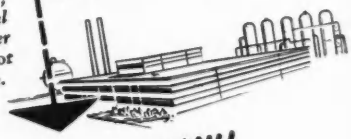

***NOW!***
**A WHITE ENAMEL THAT STAYS WHITE**

Write today for folder on Prufcoat BX White Enamel—the acid and alkali resistant white coating that stays white, inside or outside. Can be applied to moist surfaces.

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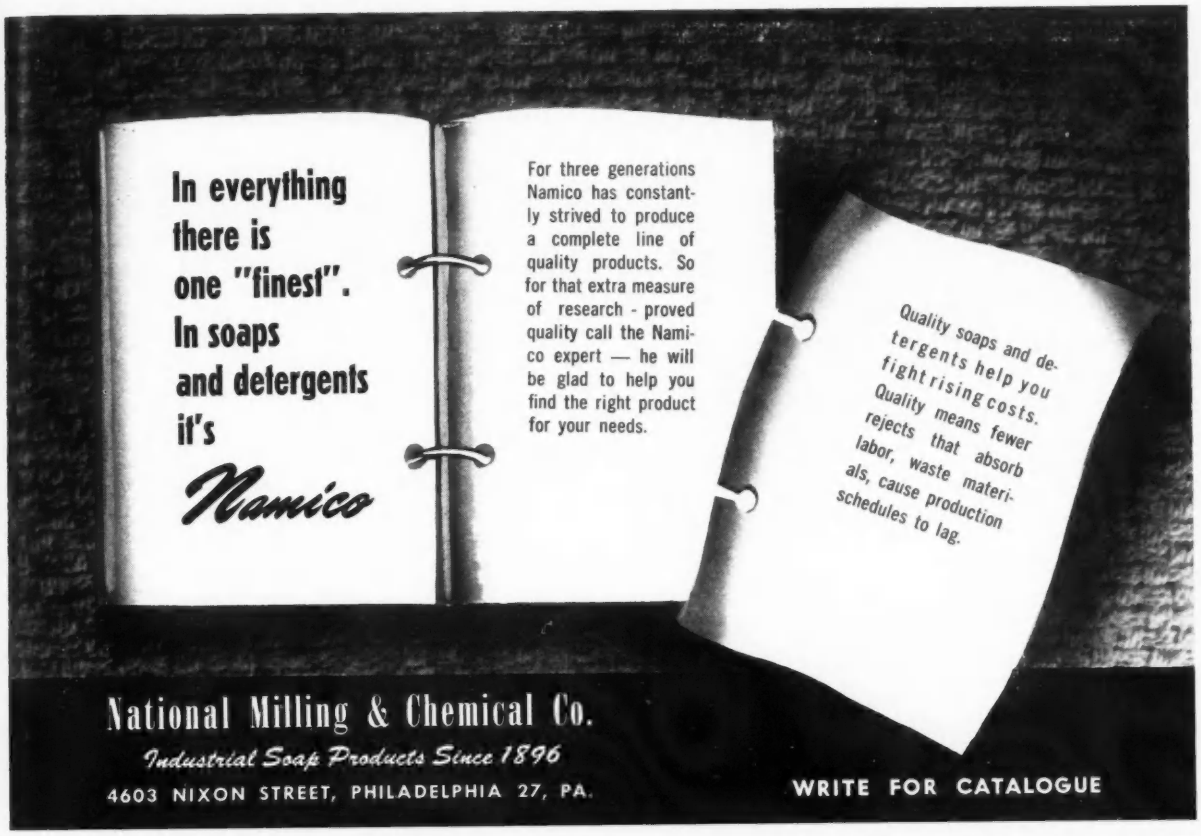
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DYESTUFFS
BICK & CO., INC.
READING, PA.
CHEMICALS

# • CLASSIFIED ADVERTISEMENTS •

**The rate for "Position Wanted" advertisements in this column is 2 cents a word—with a minimum of 50 cents per insertion. For all other types of advertisements—i.e., help wanted, machinery wanted or for sale—the rate is $7.50 per column inch or less per insertion.**

SALES EXECUTIVE: Dyestuffs and Chemicals: Many years successful sales, promotion and policy-making of same to textile industry. Currently directing sales with satisfied national dyestuff and chemical manufacturers but am not exercising ability anywhere near capacity. Creative developer, cultivator, cooperative, personable, aggressive and ambitious. Married, forty years of age. Available on 2 or 3 months' termination notice. Will reply to principals only. Write Box 183.

WANTED: Dyehouse foreman—must be familiar with the dyeing and finishing of cotton canvas goods—should be production and cost minded and be able to get along with men—excellent opportunity for right man—experience and good references necessary — Mid-West location — replies confidential. Write Box No. 191.

WANTED: Southern district salesman and northern district salesman with technical background and experience in textile dyeing and finishing to handle sales and technical service for dyes. State age, education and experience. Compensation dependent on experience and past record. Replies will be held in strictest confidence. Write: Pittsburgh Coke & Chemical Company, Fine Chemicals Division, Pittsburgh 25, Pa.

POSITION WANTED: Experienced plant manager, dyeing, printing, finishing, box and jig work, good executive and production planner, quality and cost conscious, thorough knowledge all equipment, its operation and maintenance, full understanding of trade's demands and requirements, any location. Write Box No. 165.

POSITION WANTED: Technically trained dyestuff man with many years of experience in selling and other essentials, requires a position as salesman for well established dyestuff firm or purchasing agent for a mill. Write Box No. 193.

POSITION WANTED: Dyer and Textile Chemist age 30, would like to relocate. Graduate Phila. Textile Inst. with 2½ years experience. Have dyed hosiery and raw stock using directs, develops, acid and acetate colors, on all fibers. Would be willing to start at bottom to gain experience. Locate within 50 miles of Philadelphia. Write Box No. 187.

POSITION WANTED: Experienced dyer of acetate, viscose and nylon on boxes and jiggs. B.S. degree in textile chemistry and coloring. At present employed as assistant to superintendent. Wish to locate in upper New York State--married veteran. Write Box 182.

WANTED: Textile laboratory technician—preferable a textile school graduate—for routine and experimental work —dyeing and finishing cotton canvas goods—excellent opportunity — Mid-West location — replies confidential. Write Box No. 190.

POSITION WANTED: Technical Sales. Large following, wide experience on all types dyeing equipment, backed with wet and dry finishing experience. Business training, consulting and executive background. Married. Write Box No. 186.

CHEMISTS AND CHEMICAL ENGINEERS by prominent Southeastern textile company for development and research. Experience and advanced training desirable but not necessary. Please write details of education, experience and salary requirement. Write Box No. 199.

WANTED—Northern R. I. Finishing Plant, Laboratory Technician with textile school background as assistant to plant chemist. Some plant experience desirable. Young man preferred. Write stating full qualifications, etc., and salary desired. All replies will be kept strictly confidential. Write Box No. 200.

SALES REPRESENTATIVE AVAILABLE. Aggressive manufacturer's agent will sell your chemicals, dyestuffs, equipment, etc., to New England textile plants. Excellent contacts and references. Write Box No. 201.

POSITION WANTED: Graduate chemist-textile colorist offers valuable laboratory and mill background in dyeing of natural and synthetic fibers including newest acrylies. Interested in a position in process development or as assistant to production chief. Age 30. Married. Write Box No. 202.

WANTED: An excellent opportunity for a textile chemist, for laboratory control work. Cotton bleaching experience would be desirable. Please give full details of experience in first letter indicating your age and salary expected. Write Box No. 203.

WANTED: JIG DYER-FINISHER—12 years' experience on all types of satin finishes, taffetas, nylon, pigments, bengalines, marquisettes, linings, and all rayon and acetate piece goods. Capable of taking complete charge of finishing department. Write Box No. 205.

POSITION WANTED: Experienced dyer, age 35, desires change preferably New England states. Experienced in woolen, worsted, blends on piece dyes also raw stock, tops and yarns. Write Box No. 206.

## Classified Advertisements

Experienced textile chemist and colorist seeks wider opportunities. Twenty-five years in charge of plant laboratory, some practical dyeing. Experienced in scouring, bleaching, dyeing and finishing, natural and synthetic fibers, good color matcher and formulator. Familiar with all classes of dyestuffs. Write Box No. 204.

Silk Throwster has time open to make tram and organzine. Quality work only. Write Box 8399, 217 - 7th Ave., N. Y.

WANTED: TEXTILE COLORIST. Must be familiar with roller printing on Viscose and Acetate and Mixtures. Willing to locate anywhere in U. S. or Canada. Permanent position with an old established and growing company. Mail resume to Box No. 207.

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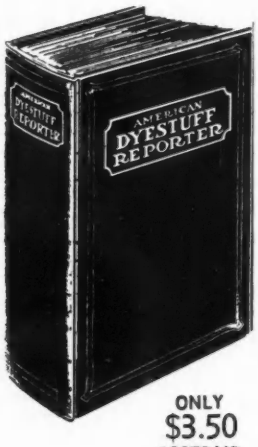


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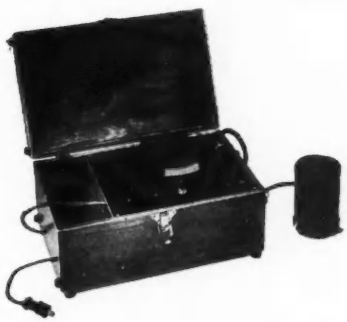
with
**PHOTOVOLT Photoelectric REFLECTION METER**



A truly practical precision instrument for color matching and for specifying color by tristimulus values, also for fading and detergency tests . . . for production control and laboratory work.

**Portable, sturdy, simple to operate**

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Also: Colorimeters, Fluorescence Meters, pH Meters

*A Peg Palmer Dress*

Here, as in so many textiles, the finish adds greatly to the desirability of the fabric. In the development of modern finishes which enhance the utility and durability of fabrics, as well as their beauty, we at Burkart-Schier have been privileged to play a part.

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PENETRANTS • SOFTENERS • SOLUBLE OILS • FINISHES

## INDEX TO ADVERTISERS


| | |
|---|---|
| Aktivin Div., The Heyden Chemical Corp. | CIX |
| Alco Oil & Chemical Corp. | C |
| Althouse Chemical Co., Inc. | XCII |
| Amalgamated Chemical Corp. | LX |
| American Aniline Products, Inc. | XI |
| American Cyanamid Co. (Ind. Chem. Div.) | Back Cover |
| American Dyewood Co. | CXVI |
| American Polymer Corporation | XCVIII |
| Antara Products Division of General Dyestuff Corp. | XCIX |
| Apex Chemical Co., Inc. | CXVIII |
| Arkansas Co., Inc. | XXVI |
| Armour and Co. | XVII |
| Arnold, Hoffman & Co., Inc. | LXXV |
| Atlantic Chemical Co., Inc. | XXVIII, XXIX |
| Atlantic Chemical Corporation | LXX |
| Atlantic Refining Co. | XC |
| Atlas Color & Chemical Co. | CXVI |
| Atlas Electric Devices Co. | LXXII |
| Aula Chemicals Inc. | CXII |
| Baker & Adamson Products, General Chem. Div., Allied Chemical & Dye Corp. | XCVII |
| Barium Reduction Corp. | C |
| Barry Chemical Company | CXVI |
| Becco Sales Corp. | XLIX |
| Belle Chemical Co., Inc. | XCV |
| Berg Laboratories, Charles W. | CXXI |
| Berkshire Color and Chemical Co. | CXXV |
| Bernard Color & Chemical Corp. | CV |
| Bersworth Chemical Co. | CVIII |
| Bick & Co., Inc. | CXIX |
| Blickman, Inc., S. | CVIII |
| Burkart-Schier Chemical Co. | CXXII |
| Butterworth & Sons Co., H. W. | CXXVI |
| Calco Chemical Division, American Cyanamid Co. | XXIII |
| Campbell & Co., Inc., John | LXXVIII |
| Carbic Color & Chemical Co., Inc. | VI, VII |
| Catalin Corp. of America | LXXXVIII |
| Celanese Corp. of America | LXXIV |
| Ciba Company, Inc. | XIII |
| Colgate-Palmolive-Peet Company | LXII |
| Commonwealth Color & Chemical Co. | LXVI |
| Continental Chemical Co. | LXXXVI |
| Dexter Chemical Corp. | XLII |
| Drew & Co., Inc., E. F. | LXI |
| Du Pont de Nemours & Co., (Inc.) E. I. | |
| Dyestuffs Division | Front Cover |
| Electrochemicals Dept. | LXV |
| Eco Engineering Co. | XCVIII |
| Elbert & Co., Inc. | XCVI |
| Emery Industries, Inc. | LVII |
| Emkay Chemical Co. | CVI |
| Enley Products, Inc. | CXVIII |
| Fancourt & Co., W. F. | Third Cover |
| Gaston County Dyeing Machine Co. | LV |
| Geigy Company, Inc. | XXXI |
| General Dyestuff Corp. | LXIII, XCIX |
| Gessner Company, David | XLVI |
| Gotham Instruments Division of Machine & Metals, Inc. | XV |
| Gross & Co., A. | LIV |
| Gurley, W. & L. E. | CXXIV |
| Hart Products Corp. | CI |
| Hercules Powder Co. | LII |
| Hilton-Davis Chemical Co., The | LXXIII |
| Hooker Electrochemical Co. | LXXI |
| Houghton & Co., E. F. | CIII |
| Instrument Development Laboratories, Inc. | CXVII |
| Interchemical Corp., Textile Colors Div. | LXXX, LXXXI |
| Jefferson Color & Chemical Co. | CXIII |
| Kali Mfg. Co. | CXVI |
| Kelco Co. | LXXXV |
| Klauder Weldon Giles Machine Co. | XCVI |

SERS
CIX
C
XCII
LX
XI
Back Cover
CXVI
XCVIII
XCIX
CXVIII
XXVI
XVII
LXXV
XXVIII, XXIX
LXX
XC
CXVI
LXXII
CXII
emical
XCVII
C
CXVI
XLIX
XCV
CXXI
CXXV
CV
CVIII
CXIX
CVIII
CXXII
CXXVI
XXIII
LXXVIII
VI, VII
LXXXVIII
LXXIV
XIII
LXII
LXVI
LXXXVI
XLII
LXI
Front Cover
LXV
XCVIII
XCVI
LVII
CVI
CXVIII
Third Cover
LV
XXXI
XIII, XCIX
XLVI
XV
LIV
CXXIV
CI
LII
LXXIII
LXXI
CIII
CXVII
X, LXXXI
CXIII
CXVI
LXXXV
XCVI
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Fifteen seconds is all it takes to make an air permeability test with the GURLEY PERMEOMETER* on fabrics which permit a passage of from 1 to 400 cu. ft. of air/min/sq. ft. at a pressure drop of 0.5".

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*Scientific Instrument Makers Since 1845*


## INDEX TO ADVERTISERS


| | |
|---|---|
| Laurel Soap Mfg. Co., Inc. | LXVII |
| Leatex Chemical Co. | CXIV |
| Mac Chemical Company | CXIV |
| Macbeth Daylighting Corp. | LVI |
| May, Inc., Otto B. | VIII, IX |
| Metalsmith Div., Orange Roller Bearing Co., Inc. | CXVIII |
| Minneapolis-Honeywell Regulator Co. (Industrial Div.) | LXXXIV |
| Monsanto Chemical Co. | V, XLI |
| National Aniline Division, Allied Chemical & Dye Corp. | XXIV, XXV |
| National Milling & Chemical Co. | CXIX |
| National Starch Products | XXXVII |
| Naugatuck Chemical Div. of U. S. Rubber Co. | CXXIII |
| Nopco Chemical Co. | LVIII |
| Nova Chemical Corp. | XLIII |
| Nyanza Color & Chemical Co., Inc. | IV |
| Onyx Oil & Chemical Co. | XXXIII |
| Organic Chemical Corp. | LXXXII |
| Pabst Sales Company | CIV |
| Patent Chemicals, Inc. | XLVIII |
| Pennsylvania Refining Co. | XXXVIII |
| Perkins & Son, Inc., B. F. | XXX |
| Pfister Chemical Works, Inc. | Second Cover |
| Pfizer & Co., Inc., Chas. | XXXIV |
| Photovolt Corp. | CXXI |
| Pioneer Chemical Works, Inc. | CII |
| Pittsburgh Coke & Chemical Co. | LXXIX |
| Procter & Gamble | XXII |
| Prufcoat Laboratories, Inc. | CXVIII |
| Refined Products Corp. | LXVIII, LXIX |
| Richmond Oil Soap & Chemical Co., Inc. | CXVII |
| Rohm & Haas Company | XVIII, XIX |
| Rossiger Co., Inc., H. P. | CXIV |
| Royce Chemical Co. | III |
| Rumford Chemicals Works | LXXXVII |
| Rutherford Dye & Chem. Co., Inc. | XXXVI |
| Sandoz Chemical Works, Inc. | XXXIX, XCIII, XCIV |
| Scholler Bros., Inc. | XXXV |
| Scott Testers, Inc. | CX |
| Soluol Chemical Co., Inc. | LIX |
| Solvay Sales Div., Allied Chemical & Dye Corp. | LXXXIII |
| Sonneborn Sons, Inc., L. | XXVII |
| South Florida Test Service | CII |
| Standard Brands, Inc. | LXXXIX |
| Standard Chemical Products, Inc. | LXXVII |
| Standard Fabricators, Inc. | X |
| Stein, Hall & Co. | XX |
| Synthron, Inc. | XII |
| Taylor Instrument Companies | L |
| Tennessee Eastman Co. | XLV |
| Tex-Chem Co. | CVII |
| Tinolan Co. of America, Inc. | CIV |
| Titan Chemical Products, Inc. | CXVII |
| U. S. Rubber Co., Naugatuck Chemical Div. | CXXIII |
| U. S. Testing Company, Inc. | CVI |
| Vanderbilt Co., Inc., R. T. | CX |
| Van Vlaanderen Machine Co. | CXV |
| Virginia Smelting Co. | CXII |
| Wallerstein Co., Inc. | LIII |
| Warwick Chemical Co. | XLVII |
| Watson-Park Co. | XL |
| Westvaco Chemical Division, Food Machinery & Chemical Corp. | CXI |
| Wolf & Co., Jacques | LI |
| Wyandotte Chemicals Corp. | XXI |
| Young Aniline Works, Inc. | XVI |
| Zinsser & Co., Inc. | XXXII |

SERS

LXVII
CXIV

CXIV
LVI
VIII, IX
CXVIII
LXXXIV
V, XLI

XXIV, XXV
CXIX
XXXVII
CXXIII
LVIII
XLIII
IV

XXXIII
LXXXII

CIV
XLVIII
XXXVIII
XXX
Second Cover
XXXIV
CXXI
CII
LXXIX
XXII
CXVIII

LXVIII, LXIX
CXVII
XVIII, XIX
CXIV
III
LXXXVII
XXXVI

XCIII, XCIV
XXXV
CX
LIX
LXXXIII
XXVII
CII
LXXXIX
LXXVII
X
XX
XII

L
XLV
CVII
CIV
CXVII

CXXIII
CVI

CX
CXV
CXII

LIII
XLVII
XL
CXI
LI
XXI

XVI

XXXII

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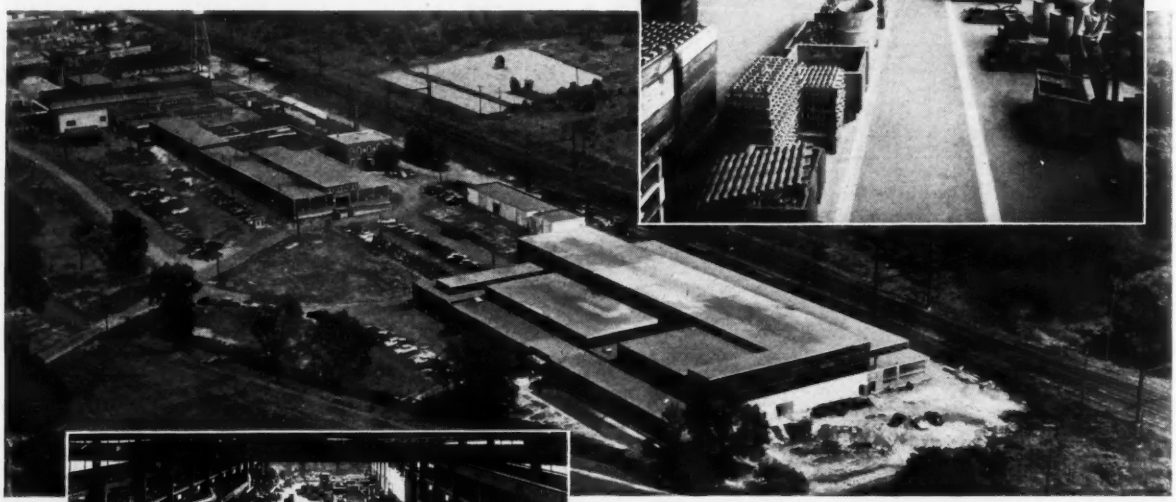
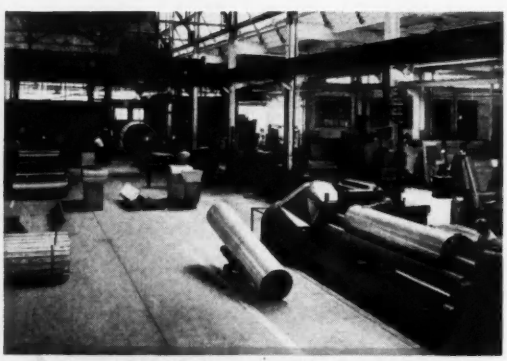


Upper right, new link room for manufacture of chains used in Butterworth Tenters—straight automatic, vibratory, mercerizing, return.

Above, main erection floor in new plant. Boxing and crating operations in foreground.



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**YELLOW PRUSSIATE OF SODA**
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[Potassium Ferrocyanide $K_4Fe(CN)_6 \cdot 3H_2O$]

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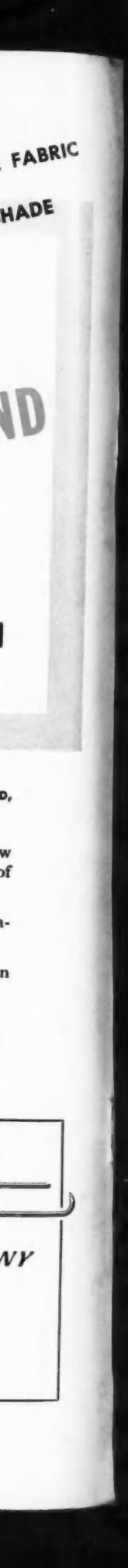
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